PB82-108119

Coal Mine Siting for the Ohio River Basin Energy Study

Ohio River Basin Energy Study
Urbana, IL

Prepared for

Environmental Protection Agency
Washington, DC

Sep 81

U.S. Department of Commerce
National Technical Information Service
NTIS.

TECHNICAL REPORT DATA
(Please read Instructions on the reverse before completing)

1. REPORT NO. EPA-600/7-81-116	2. ORD Report	3. RECIPIENT'S ACCESSION NO. **PB82** 108119
4. TITLE AND SUBTITLE Coal Mine Siting for the Ohio River Basin Energy Study		5. REPORT DATE July 1981 6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) Donald A. Blome		8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS University of Kentucky Lexington, Kentucky 40583		10. PROGRAM ELEMENT NO. C2JN1E 11. CONTRACT/GRANT NO. R805590
12. SPONSORING AGENCY NAME AND ADDRESS U.S. Environmental Protection Agency Office of Research and Development Office of Environmental Engineering & Technology Washington, D.C. 20460		13. TYPE OF REPORT AND PERIOD COVERED 14. SPONSORING AGENCY CODE EPA-ORD

15. SUPPLEMENTARY NOTES

This project is part of the EPA-planned and coordinated Federal Interagency Energy/Environment Research and Development Program.

16. ABSTRACT

This report was prepared as part of the Ohio River Basin Energy Study (ORBES), a multidisciplinary policy research program supported by the Environmental Protection Agency. In part 1, an overview of the ORBES-region coal industry is presented. (The region consists of all of Kentucky, most of West Virginia, and substantial portions of Illinois, Indiana, Ohio, and Pennsylvania.) Topics include coal production, mine types, reserves, selected coal properties, coal markets, employment, working conditions, wages, and quality of life.

In part 2, the procedures for siting coal mines under the ORBES energy development scenarios are set forth. The coal mine siting analysis projects at the county level the number and type of new coal mines that would be opened in the ORBES region through the year 2000 under various scenario conditions and constraints. Among these conditions and constraints are the locational siting pattern of additional power plants in each scenario, the total coal production specified for the year 2000 by the ORBES energy demand model, and the sources of high and low sulfur coal, by mine type, specified by the ORBES coal supply analysis.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Energy Conversion	Integrated Assessment Extraction Coal	

18. DISTRIBUTION STATEMENT release to public	19. SECURITY CLASS *(This Report)* unclassified	21. NO. OF PAGES 190
	20. SECURITY CLASS *(This page)* unclassified	22. PRICE

EPA Form 2220-1 (9-73)

TYPING GUIDE SHEET
BEGIN FIRST LINE OF TEXT HERE
CENTER OF PAGE
TOP OF IMAGE AREA
DROPPED HEAD. BEGIN SECTIONS HERE
6-1/2"
9-1/8"

PB82-108119

September 1981
EPA-600/7-81-116

COAL MINE SITING FOR THE OHIO RIVER BASIN ENERGY STUDY

by

Donald A. Blome

Institute for Mining and Minerals Research
University of Kentucky
Lexington, Kentucky 40583

Prepared for
Ohio River Basin Energy Study (ORBES)

Grant No. EPA R805590

Project Officer

Lowell Smith
Office of Environmental Engineering and Technology
Office of Research and Development
U.S. Environmental Protection Agency
Washington, D.C. 20460

OFFICE OF RESEARCH AND DEVELOPMENT
U.S. ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

BEGIN LAST LINE OF TEXT
BOTTOM OF IMAGE AREA OUTSIDE DIMENSION FOR TABLES AND ILLUSTRATIONS
3/8"
PAGE NUMBER
EPA-287 (Cin.)
(4-76)

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA 22161

DISCLAIMER

This report has been reviewed by the Office of Research and Development, U.S. Environmental Protection Agency, and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the U.S. Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

FOREWORD

The Ohio River Basin Energy Study (ORBES) is an interdisciplinary, multi-university inquiry into the environmental, economic, and social impacts of energy facility development in a major portion of the Ohio River Basin. The study was initiated by the U.S. Environmental Protection Agency in 1976 in response to a directive from the U.S. Senate Appropriations Committee.

Most of the ORBES research was conducted by a group of faculty members at the University of Illinois, Indiana University, the University of Kentucky, the University of Louisville, The Ohio State University, the University of Pittsburgh, Purdue University, and West Virginia University. In a few instances, the necessary expertise was found at other universities or independent research organizations.

This report is one of a series produced in support of the overall ORBES assessment. For a summary of the entire study, see Ohio River Basin Energy Study (ORBES): Main Report, by the ORBES Core Team, also being published by the U.S. Environmental Protection Agency.

CONTENTS

Page

Figures v
Tables vii

1. AN OVERVIEW OF THE ORBES COAL INDUSTRY 1

- 1.1 Coal Production 1
- 1.2 Mine Types 2
- 1.3 Reserves 2
- 1.4 Selected Properties of Coal in the ORBES States 6
- 1.5 Coal Markets 6
  - 1.51 Steam Coal Markets 9
  - 1.52 Non-Steam Coal Markets 9
- 1.6 Employment 11
- 1.7 Innovations in Mining 11
- 1.8 Working Conditions 13
- 1.9 Wages 13
- 1.10 Qaulity of Life 16
- 1.11 Summary 16
- References for Chapter 1 18

2. SITING PROCEDURES FOR ORBES COAL MINES 19

  - 2.01 Major Assumptions and Conditions 20
- 2.1 Assigned ORBES Coal Mines 21
  - 2.11 Assigned SIP Coal Mines 22
  - 2.12 Assigned Mines to Planned Power Plants 23
  - 2.13 Assigned Mines to Scenario Unit Addition Power Plants 24
- 2.2 Allocated ORBES Coal Mines 24
- References for Chapter 2 27

3. APPENDIX 29

FIGURES

Number Page

1 New Underground Mines: Scenario 1 156

2 New Surface Mines: Scenario 1 157

3 New Underground Mines: Scenario 2 158

4 New Surface Mines: Scenario 2 159

5 New Underground Mines: Scenario 2a 160

6 New Surface Mines: Scenario 2a 161

7 New Underground Mines: Scenario 2b 162

8 New Surface Mines: Scenario 2b 163

9 New Underground Mines: Scenario 3 164

10 New Surface Mines: Scenario 3 165

11 New Underground Mines: Scenario 4 166

12 New Surface Mines: Scenario 4 167

13 New Underground Mines: Scenario 5 168

14 New Surface Mines: Scenario 5 169

15 Bureau of Mines Districts 171

TABLES

Number		Page
1.1	Coal Production by State (Selected Years)	3
1.2	Production by Type of Mine.	4
1.3	Number and Types of Coal Mines.	5
1.4	Coal Reserves in the ORBES States and Eastern U.S. . .	7
1.5	U.S. Coal Consumption by Sector (Selected Years). . . .	8
1.6	Origin and Destination of ORBES Steam Coal: 1976 . . .	10
1.7	Coal Industry Employment by Type of Mine: 1965 and 1975.	12
1.8	Underground Production by Type of Mining: 1965 and 1975.	14
1.9	Coal Mining Fatal and Non-Fatal Injuries in the U.S. by Type of Mine: 1965 and 1975	15
2.1	Percentage of 1974 ORBES Coal Production by Type of Mine	25
2.2	Percentage of 2000 ORBES Coal Production by Type of Mine	25
A-1A	Origin and Destination of ORBES Steam Coal: 1985 and 2000: Illinois.	30
A-1B	Origin and Destination of ORBES Steam Coal: 1985 and 2000: Indiana	31
A-1C	Origin and Destination of ORBES Steam Coal: 1985 and 2000: Kentucky.	32
A-1D	Origin and Destination of ORBES Steam Coal: 1985 and 2000: Ohio.	33
A-1E	Origin and Destination of ORBES Steam Coal: 1985 and 2000: Pennsylvania.	34
A-1F	Origin and Destination of ORBES Steam Coal: 1985 and 2000: West Virginia	35

Number		Page
A-2A	Coal Supplies from East Kentucky to ORBES SIP Plants in Illinois, Indiana and Kentucky.	37
A-2B	Coal Supplies from West Virginia to ORBES SIP Plants in Ohio and West Virginia.	38
A-2C	Coal Supplies from Pennsylvania to ORBES SIP Plants in Pennsylvania.	39
A-3	Coal Assignments to "Planned" Power Plants	41
A-4A	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 1, Illinois	43
A-4B	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 1. Indiana.	44
A-4C	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 1, Kentucky	45
A-4D	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 1, Ohio	46
A-4E	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 1, Pennsylvania	47
A-4F	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 1, West Virginia.	48
A-5A	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2, Illinois	49
A-5B	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2, Indiana.	50
A-5C	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2, Kentucky	51
A-5D	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2, Ohio	52
A-5E	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2, Pennsylvania	53
A-5F	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2, West Virginia.	54

Number		Page
A-6A	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2a, Illinois	55
A-6B	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2a, Indiana.	56
A-6C	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2a, Kentucky	57
A-6D	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2a, Ohio	58
A-6E	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2a, Pennsylvania	59
A-6F	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2a, West Virginia.	60
A-7A	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2b, Illinois	61
A-7B	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2b, Indiana.	62
A-7C	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2b, Kentucky	63
A-7D	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2b, Ohio	64
A-7E	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2b, Pennsylvania	65
A-7F	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 2b, West Virginia.	66
A-8A	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 3, Illinois	67
A-8B	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 3, Indiana.	68
A-8C	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 3, Kentucky	69
A-8D	Coal Assignments to Scenario Unit Addition Power Plants: Scenario 3, Ohio	70

Number Page

A-8E Coal Assignments to Scenario Unit Addition Power Plants: Scenario 3, Pennsylvania 71

A-8F Coal Assignments to Scenario Unit Addition Power Plants: Scenario 3, West Virginia. 72

A-9A Coal Assignments to Scenario Unit Addition Power Plants: Scenario 4, Illinois 73

A-9B Coal Assignments to Scenario Unit Addition Power Plants: Scenario 4, Indiana. 74

A-9C Coal Assignments to Scenario Unit Addition Power Plants: Scenario 4, Kentucky 75

A-9D Coal Assignments to Scenario Unit Addition Power Plants: Scenario 4, Ohio 76

A-9E Coal Assignments to Scenario Unit Addition Power Plants: Scenario 4, Pennsylvania 77

A-9F Coal Assignments to Scenario Unit Addition Power Plants: Scenario 4, West Virginia. 78

A-10A Coal Assignments to Scenario Unit Addition Power Plants: Scenario 5, Illinois 79

A-10B Coal Assignments to Scenario Unit Addition Power Plants: Scenario 5, Indiana. 80

A-10C Coal Assignments to Scenario Unit Addition Power Plants: Scenario 5, Kentucky 81

A-10D Coal Assignments to Scenario Unit Addition Power Plants: Scenario 5, Ohio 82

A-10E Coal Assignments to Scenario Unit Addition Power Plants: Scenario 5, Pennsylvania 83

A-10F Coal Assignments to Scenario Unit Addition Power Plants: Scenario 5, West Virginia. 84

A-11A Production and Consumption of ORBES Coal in 2000 By Aggregated Bureau of Mines Districts and Sulfur Content: Scenario 1 85

A-11B Production and Consumption of ORBES Coal in 2000 By Aggregated Bureau of Mines Districts and Sulfur Content: Scenario 2 86

Number | Page

A-11C Production and Consumption of ORBES Coal in 2000 By Aggregated Bureau of Mines Districts and Sulfur Content: Scenario 2a 87

A-11D Production and Consumption of ORBES Coal in 2000 By Aggregated Bureau of Mines Districts and Sulfur Content: Scenario 2b 88

A-11E Production and Consumption of ORBES Coal in 2000 By Aggregated Bureau of Mines Districts and Sulfur Content: Scenario 3. 89

A-11F Production and Consumption of ORBES Coal in 2000 By Aggregated Bureau of Mines Districts and Sulfur Content: Scenario 4. 90

A-11G Production and Consumption of ORBES Coal in 2000 By Aggregated Bureau of Mines Districts and Sulfur Content: Scenario 5. 91

A-12A ORBES Coal Production and Number of New Mines in 2000 By Bureau 0f Mines Districts and Type of Mine: Scenario 1. 93

A-12B ORBES Coal Production and Number of New Mines in 2000 By Bureau of Mines Districts and Type of Mine: Scenario 2. 94

A-12C ORBES Coal Production and Number of New Mines in 2000 By Bureau of Mines Districts and Type of Mine: Scenario 2a 95

A-12D ORBES Coal Production and Number of New Mines in 2000 By Bureau of Mines Districts and Type of Mine: Scenario 2b 96

A-12E ORBES Coal Production and Number of New Mines in 2000 By Bureau of Mines Districts and Type of Mine: Scenario 3. 97

A-12F ORBES Coal Production and Number of New Mines in 2000 By Bureau of Mines Districts and Type of Mine: Scenario 4. 98

A-12G ORBES Coal Production and Number of New Mines in 2000 By Bureau of Mines Districts and Type of Mine: Scenario 5. 99

Number | Page

A-13A Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 1, Illinois 101

A-13B Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 1, Indiana. 102

A-13C Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 1, East Kentucky. 103

A-13D Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 1, West Kentucky. 104

A-13E Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 1, Ohio. 105

A-13F Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 1, Pennsylvania. 106

A-13G Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 1, West Virginia 107

A-14A Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2, Illinois 109

A-14B Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2, Indiana. 110

A-14C Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2, East Kentucky. 111

Number | Page

A-14D Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2, West Kentucky. 112

A-14E Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2, Ohio 113

A-14F Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2, Pennsylvania 114

A-14G Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2, West Virginia. 115

A-15A Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2a, Illinois. 117

A-15B Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2a, Indiana 118

A-15C Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2a, East Kentucky 119

A-15D Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2a, West Kentucky 120

A-15E Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2a, Ohio 121

A-15F Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2a, Pennsylvania 122

Number		Page
A-15G	Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2a, West Virginia.	123
A-16A	Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2b, Illinois	125
A-16B	Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2b, Indiana	126
A-16C	Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2b, East Kentucky.	127
A-16D	Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2b, West Kentucky.	128
A-16E	Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2b, Ohio	129
A-16F	Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2b, Pennsylvania	130
A-16G	Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 2b, West Virginia.	131
A-17A	Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 3, Illinois	133
A-17B	Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 3, Indiana.	134

Number Page

A-17C Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 3, East Kentucky 135

A-17D Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 3, West Kentucky 136

A-17E Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 3, Ohio 137

A-17F Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 3, Pennsylvania 138

A-17G Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 3, West Virginia. 139

A-18A Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 4, Illinois 141

A-18B Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 4, Indiana. 142

A-18C Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 4, East Kentucky 143

A-18D Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 4, West Kentucky 144

A-18E Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 4, Ohio 145

Number Page

A-18F Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 4, Pennsylvania 146

A-18G Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 4, West Virginia. 147

A-19A Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 5, Illinois 149

A-19B Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 5, Indiana. 150

A-19C Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 5, East Kentucky 151

A-19D Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 5, West Kentucky 152

A-19E Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 5, Ohio 153

A-19F Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 5, Pennsylvania 154

A-19G Coal Production and Number of New Mines in 2000 for ORBES Counties and Bureau of Mines Districts by Type of Mine: Scenario 5, West Virginia. 155

1. AN OVERVIEW OF THE ORBES COAL INDUSTRY

The ORBES states in general and the ORBES counties in particular have been the nation's major bituminous coal producing area for nearly a century. In fact, the coals from the Western Pennsylvania fields played a major part in the industrial development of the United States during the latter part of the 19th Century.

The ORBES region is served by two major coal fields, the Appalachian coal field, which extends from Pennsylvania and Ohio southwestward to Alabama, and the Eastern Interior Coal field, which is found in Illinois, Indiana and Western Kentucky. There are some important differences between the coals found in these two fields, principally in the sulfur content. In addition to differing coal properties, such variables as the means of production, the amount of reserves, the markets served, and factors concerning the workforce must all be addressed in an effort to understand the methodology utilized in the siting of coal mines within the ORBES region.

1.1 Coal Production

As a preface to a discussion on the production of coal, it should be observed that in economic parlance, coal is a typical example of a demand driven commodity. That is, when there is a demand for coal, producers will generally mine sufficient quantities to meet that demand. Conversely, when demand slackens--for whatever reasons--production slackens. With this concept in mind, one can more readily grasp the series of ups and downs which have characterized the United States coal industry for the past several decades.

In a very brief overview, the nation's coal production was quite high during World War I, exceeding 500 million tons per year and remained at elevated levels throughout the 1920's. During the depression years of the 1930's, coal production, like the national economy, fell to depressed levels with annual production ranging between 300 and 400 million tons.

World War II and the immediate post war years brought a resurgence to the coal industry with national production reaching a record 630 million tons in 1947. But then the slide began. After a four year period of fluctuating production, the bottom was reached in 1954 with production being just over 391 million tons--a 62 percent decline from the peak year just seven years before.

By the early 1960's, demand and production began to pick up again and erratically advanced throughout the 1960's and 1970's until a new national production level of 648 million tons was produced in 1975. Successive new production records were then achieved in 1976 and 1977.

Throughout this period, the ORBES states produced, by far, the majority of the coal in the United States. Table 1.1 gives state level production for selected years during the period 1960-1975. The decline in the percentage of U.S. coal production which comes from the ORBES states between 1970 and 1975 was due largely to the expanded production in the Western states; primarily Colorado, Montana, North Dakota and Wyoming.

1.2 Mine Types

Until 1974, more coal in the Unites States had been produced by underground mines than by surface mines. Since 1974, the opposite has been true. However, in the ORBES states, more coal is still produced by underground mines than by various surface mining methods, including auger and strip-auger mining. Table 1.2 shows that Illinois, Kentucky and Ohio have increased their underground production from 1965 to 1975 while Indiana, Pennsylvania and West Virginia decreased. During this same period, each state increased their surface production with the exception of Illinois; Eastern Kentucky showed a five fold increase during the ten year period.

Table 1.3 shows that the total number of active coal mines decreased from 1965 to 1975. Actually, the total number of coal mines in the United States as well as the ORBES states continued a downward trend through 1973, then began to increase in 1974. After peaking in 1975, there was a slight decline in the number of active mines during 1976.

Clearly, the most dramatic figure in Table 1.3 is the changing ratio of underground mines to surface mines. In ORBES states during 1965, approximately 30 percent of the active mines were surface mines; by 1975, this figure had risen to 63 percent. Numerically, Kentucky and especially East Kentucky, contributed most heavily to the increase in surface mining operations.

1.3 Reserves

The most recent comprehensive assessment of U.S. coal reserves was conducted by the U.S. Bureau of Mines in 1974 (7). This study reports the coal reserves by county, by coal seam, by sulfur content for underground and surface mineable reserves. These estimates of reserves include the total amount of coal in the ground. The amount

TABLE 1.1

COAL PRODUCTION BY STATE (SELECTED YEARS)
(MILLIONS OF TONS)

PRODUCING AREA	1960[1]	1965[1]	1970[1]	1975[2]
Illinois	45.977	58.483	65.119	59.537
Indiana	15.538	15.565	22.263	25.124
East Kentucky	66.847	46.567	72.502	87.256
West Kentucky		39.199	52.803	56.357
Ohio	33.957	39.390	55.351	46.770
Pennsylvania	65.425	80.308	80.491	84.137
West Virginia	118.944	149.191	144.072	109.283
SUBTOTAL	346.688	428.703	492.601	468.464
UNITED STATES	415.512	512.088	602.932	648.438
ORBES STATES AS % OF U.S.	83.4%	83.7%	81.7%	72.2%

NOTE: The 1960 production figure for Kentucky is a state total.

SOURCE: [1] National Coal Association, Bituminous Coal Facts, 1972.

[2] National Coal Association, Coal Data, 1977.

TABLE 1.2

PRODUCTION BY TYPE OF MINE: 1965 & 1975

(MILLIONS OF TONS)

Producing Area	1965[1]			1975[2]		
	Underground	Surface	Total	Underground	Surface	Total
Illinois	25.814	32.669	58.483	31.875	27.661	59.537
Indiana	2.355	13.210	15.565	.188	24.935	25.124
East Kentucky	37.279	9.288	46.567	40.628	46.628	87.257
West Kentucky	13.409	25.790	39.199	25.004	31.353	56.356
Ohio	11.268	28.122	39.390	15.455	31.315	46.770
Pennsylvania	55.675	24.633	80.308	44.631	39.506	84.137
West Virginia	134.064	15.127	149.191	88.357	16.846	109.283
Sub Total	279.864	148.839	428.703	246.138	218.244	468.464
U.S.	332.661	179.427	512.088	292.826	355.612	648.438

NOTE: Surface tonnage includes production by auger and strip auger mining methods.

Source: 1. National Coal Association, Bituminous Coal Data, 1968 Edition.

2. U.S. Department of the Interior, Bureau of Mines, Mineral Industry Surveyors, Coal--Bituminous and Lignite in 1975, (Washington, D.C.: February, 1977).

TABLE 1.3

NUMBER AND TYPES OF COAL MINES

	1965[1]			1975[2]		
	UNDERGROUND	SURFACE	TOTAL	UNDERGROUND	SURFACE	TOTAL
Illinois	41	49	90	21	37	58
Indiana	20	41	61	2	60	62
East Kentucky	1545	190	1735	869	1350	2219
West Kentucky	46	46	92	27	155	182
Ohio	93	324	417	33	315	348
Pennsylvania	494	646	1140	132	703	835
West Virginia	1383	277	1660	703	369	1072
SUBTOTAL	3622	1573	5195	1787	2989	4776
UNITED STATES	5280	1948	7228	2292	3876	6168

NOTES: Surface mines in 1965 include auger and strip auger mines. There is no differentiation in the 1975 number of surface mines.

SOURCE: [1] National Coal Association, Bituminous Coal Data, 1968 Edition.

[2] U.S. Department of Interior, Bureau of Mines, Mineral Industry Surveys, Coal--Bitiminous and Lignite in 1975, (Washington, D.C.: Bureau of Mines, February, 1977).

that is actually recoverable is dependent upon a wide range of geologic conditions and the type of mining employed.

As can be seen in Table 1.4, the coal reserve base within ORBES is immense. As an indication of the size of the ORBES reserve base, if coal mining in ORBES were to continue at the record pace of 1976 (468.8 million tons) then the reserve base constitutes a 397 year supply. Even if the recovery rate was 50 percent, the reserve base would sustain the ORBES coal industry for approximately 200 years. However, it should be emphasized that these estimates pertain only to the amount of coal in place and do not reflect the recoverability of that coal.

1.4 Selected Properties of Coal in the ORBES States

Coal is not a homogeneous material. It is highly variable with regard to its physical and chemical composition not only on a seam basis, but even within a given seam or bed.

One of the more rudimentary analysis of coal is known as proximate analysis which measures the moisture, ash, sulfur and Btu content of coal samples. Proximate analyses are performed on coals as they are received from the mine or under conditions where the moisture and ash have been removed. All references to analysis in this section will refer to "as received" coals.

As a most sweeping generalization, it can be observed that the coal mined in the Eastern Interior Basin (Illinois, Indiana and West Kentucky) has a high sulfur content, while the Appalachian coals of Eastern Kentucky and Southern West Virginia have low sulfur contents. The Northwestern Appalachian coals of Ohio and Northern West Virginia have a relatively higher sulfur content, similar to those found in the Eastern Interior Basin coal, while the sulfur content of Pennsylvania coals is generally between those of the Eastern Interior Basin and Southern Appalachian coal.

1.5 Coal Markets

In the discussion of coal production, reference was made to coal being a demand driven commodity. As demands change, so does production and the changing nature of the demand for coal is rather dramatically evident in Table 1.5.

In 1940, the demand for coal was concentrated in five consuming sectors: electric utilities, railroads, coking coal, manufacturing industries and retial deliveries or home heating fuel. By 1960, there were only three major consuming sectors: electric utilities, coking coal and manufacturing industries.

TABLE 1.4

COAL RESERVES IN THE ORBES STATES AND EASTERN U. S.

(MILLIONS OF TONS)

	Total	Underground	Surface
Illinois	65,665	53,442	12,223
Indiana	10,622	8,948	1,674
East Kentucky	12,916	9,466	3,450
West Kentucky	12,624	8,720	3,904
Ohio	21,077	17,423	3,654
Pennsylvania	23,880	22,789	1,091
West Virginia	39,590	34,378	5,212
Sub Total	186,374	155,166	31,208
Total East U. S.	194,027	161,516	32,511

Source: U. S. Department of the Interior, Bureau of Mines, The Reserve Base of U. S. Coals by Sulfur Content (In Two Parts) 1. The Eastern States, by Robert D. Thomson and Harold F. York (Washington, D. C.: Bureau of Mines, 1975).

TABLE 1.5

U. S. COAL CONSUMPTION BY SECTOR (SELECTED YEARS)

(PERCENT OF TOTAL)

Consuming Sector	1940[1]	1960[1]	1975[2]
Electric Utilities	11.4	45.7	72.5
Railroads	19.6	0.6	-0-
Coking Coal	18.9	21.3	15.0
Steel & Rolling Mills	3.3	1.9	0.5
Other Mfg. Industries	27.0	22.5	10.7
Retail Deliveries	19.7	8.0	1.3
MM Tons Consumed	430.9	380.4	556.3

Source: 1. National Coal Association, Bituminous Coal Facts, 1968.

2. National Coal Association, Coal Data, 1977.

By 1975, the consuming sector (demand) for coal was highly concentrated in sales to electric utilities. Nearly three-fourths of the total national coal output goes into the production of electric power.

1.51 Steam Coal Markets

In 1976, the U.S. Department of Energy estimated that 478.7 million tons of coal were shipped to electric utilities throughout the United States (7). According to a National Coal Association publication, the ORBES states shipped 302.1 million tons of coal to be used in the production of electric power (7). Despite small discrepancies in the total production tonnages reported in these two publications, it can be safely noted that the ORBES states provide more than 60 percent of the coal used to produce the nation's coal fired electric power.

As can be seen in Table 1.6, there is a propensity for power plants to consumer locally mined coal. Specifically, more than 80 percent of coal consumed by Kentucky and Pennsylvania power plants comes from mines within those states, while the corresponding percentage in West Virginia is 78 percent. Indiana, Illinois, and Ohio power plants consume between 60 and 65 percent local coals in their power plants.

In addition, Table 1.6 shows that there is a substantial ORBES intrastate movement of coal as well as a strong export market outside of ORBES. Virtually all of the coal fired power plants in the Eastern United States and several Midwestern states consume ORBES coal, with Illinois and Kentucky being the principal suppliers of steam coal.

Comparing Tables 1.6 (Total Deliveries column) and 1.0, one can see that more than 85 percent of the coal mined in Illinois, Indiana, West Kentucky and Ohio goes to the steam coal market.

1.52 Non-Steam Coal Markets

Although the data are not available in a form which permits a precise analysis of the non-steam uses of ORBES coal, they do permit inferences to be drawn. For example, East Kentucky, Pennsylvania and West Virginia have sizeable shipments of coal which do not enter the steam coal market.

It should be pointed out that most of the "captive" mines in the ORBES states are located in Southern West Virginia and Eastern Kentucky. A captive mine is one that is owned and/or operated by an industrial firm and whose coal is used for a specific purpose, such as the production of coke, by the owning or parent firm. Most captive mines are related in one way or another to the steel industry.

TABLE 1.6. ORIGIN AND DESTINATION OF ORBES STEAM COAL: 1976

(THOUSANDS OF TONS)

	DESTINATION											
	ILLINOIS		INDIANA		KENTUCKY	OHIO		WEST VIRGINIA	PENNSYLVANIA			
ORIGIN	ORBES	NON-ORBES	ORBES	NON-ORBES	ORBES	ORBES	NON-ORBES	ORBES	ORBES	NON-ORBES	EXPORT (OUT OF ORBES)	TOTAL DELIVERIES
Illinois	20,957.9	478.1	1,700.7	1,372.7	1,470.9	--------	--------	--------	--------	--------	23,678.0	49,658.3
Indiana	347.9	-------	17,640.7	1,275.2	1,565.1	16.6	--------	--------	--------	--------	2,902.5	23,748.0
East Kentucky	587.8	-------	349.2	-------	5,708.0	5,165.0	1,139.9	3,969.4	102.6	81.8	35,701.3	52,805.0
West Kentucky	1,184.7	-------	4,421.2	-------	16,378.2	1,785.5	--------	--------	--------	--------	25,541.3	49,310.9
Pennsylvania	--------	-------	--------	-------	--------	390.1	664.3	82.7	19,408.2	11,975.7	9,505.4	42,026.4
West Virginia	--------	-------	40.7	-------	3.0	5,081.3	288.1	21,881.1	3,701.4	1,539.6	11,854.9	44,390.1
Ohio	--------	-------	14.7	-------	41.0	23,019.1	8,975.0	107.2	437.8	--------	7,518.0	40,112.8
Sub Total	23,078.3	478.1	24,167.2	2,647.9	25,166.2	35,457.6	11,067.3	26,040.4	23,650.0	13,597.1	116,701.4	302,051.5
West U. S.	2,145.4	9,069.3	141.7	3,129.0	41.9	3,149.4	--------	--------	--------	--------	N.A.	N.A.
East U. S.	6.1	-------	120.3	-------	185.3	435.6	2.5	2,079.2	82.3	--------	N.A.	N.A.
Total	25,229.8	9,547.4	24,429.2	5,776.9	25,393.4	39,042.6	11,069.8	28,119.6	23,732.3	13,597.1	N.A.	N.A.

NOTE: ORBES refers to power plants located in ORBES counties.

NON-ORBES refers to power plants located within the State, but outside of the ORBES boundary.

SOURCE: National Coal Association, Steam Plant Factors 1977, (Washington, D.C.: National Coal Association, 1977).

1.6 Employment

The six ORBES states accounted for 78.7 percent of the national coal employment in 1975, compared to 81.1 percent in 1965 (see Table 1.7). While the actual number of workers employed increased in all types of mining in the ORBES states during this ten year period, surface mining increases in the Western United States resulted in a decrease from 83.3 percent to 70.9 percent of the nation's surface mining work force represented by the ORBES states. The precentage of the U.S. underground mining employment represented by the ORBES states changed little from 1965 to 1975, showing an increase of 1.1 percent.

An overall increase of 37 percent in the actual number of coal mining workers was realized in the ORBES states from 1965 to 1975. As shown in Table 1.7, surface mining employment, though no longer representing a proportion of the total as great as in 1965 showed a significant increase of 95 percent between 1965 and 1975, while underground mining employment increased by 24 percent. On an individual basis, however, some states show much more significant increases in underground mining employment than surface mining employment. For example, Illinois had an increase of 74 percent in underground mining employment from 1965 to 1975 while surface mining employment increased by only 30 percent. Even more significantly, Ohio shows an increase of 135 percent in its underground mining work force between 1965 and 1975 while surface mining gained by only 21 percent.

1.7 Innovations in Mining

By 1974, coal cutting machines and continuous miners had reduced the amount of the nation's coal undercut by hand to less than one percent. As can be seen in Table 1.8, the ORBES states reflect the national mining pattern in coal mining methods with 64 percent of all underground coal production being accomplished through the use of continuous miner machines in 1975 compared to 43 percent in 1965, and a decrease from 49 percent in 1965 to 31 percent in 1975 of underground coal mining accomplished through the use of coal cutting machines. The significance of this transition is that it normally requires 13 workers per shift per section when coal is mined by coal cutting machines whereas when coal is mined with continuous miners the usual working complement is 10 men per shift per section. However, even though the actual number of employees required for coal production has decreased, the enactment of the 1972 Mine, Safety and Health Act stipulated the need for increased employment of non-production workers. As a result, while the greater use of technologically advanced equipment has reduced the need for employees in a production capacity, the Mine, Safety and Health Act provided non-production employment areas which compensate for this job market loss.

In addition to the increased use of continuous mining machines, longwall mining machines, used for several years in Europe, were introduced

TABLE 1.7

COAL INDUSTRY EMPLOYMENT BY TYPE OF MINE: 1965 & 1975

(1000 NET TONS)

	1965[1]			1975[2]		
ORBES	UNDERGROUND	SURFACE	TOTAL	UNDERGROUND	SURFACE	TOTAL
Illinois	5,172	3,124	8,296	9.010	3,840	12,850
Indiana	1,087	1,433	2,520	90	2,960	3,050
Kentucky	21,628	3,615	26,409	22,200	13,870	36,070
Ohio	3,709	3,854	7,563	8,730	4,700	13,430
Pennsylvania	18,515	5,335	23,850	21,980	7,980	29,960
West Virginia	38,361	2,647	41,008	48,400	5,810	54,210
TOTAL	88,472	20,008	108,480	110,410	39,160	149,570
UNITED STATES	109,735	23,997	133,732	134,710	55,170	189,880

SOURCE: [1] National Coal Association, Bituminous Coal Data 1968 Edition, (Washington, D.C.: National Coal Association, 1969).

[2] National Coal Association, Coal Data 1976, (Washington, D. C.: National Coal Association, 1977).

into the United States in the late 1960's. As shown in Table 1.8, the longwall method represents only .2 percent of underground coal production in the six ORBES states compared to three percent nationwide. Although this method allows up to an 85 percent recovery rate compared to 60 to 70 percent recovery through continuous and conventional mining methods, the terrain in the Appalachian section of the ORBES states restricts the use of the longwall method. Thus, it is not likely that longwall mining will have much impact on the employment patterns in the ORBES region.

1.8 Working Conditions

Since the enactment of the 1972 Mine, Safety and Health Act, coal mining working conditions have consistently improved. This statement is borne out by a comparison of 1965 and 1975 figures on coal mine fatalities. In 1965, there were 73 percent more fatalities than in 1975, even though the number of employees in the national coal workforce had increased by 41 percent during this ten year period (3, 4). Non-fatal accidents in coal mining show a small increase between 1965 and 1975 which is due in part to expansion in surface mining employment, which grew from 23,997 workers in 1965 to 55,170 workers in 1975. As shown in Table 1.9, the actual number of surface mining fatalities has increased by 78 percent nationally and non-fatal injuries have increased by 48 percent between 1965 and 1975. In contrast, even though underground coal mining employment has increased by 27 percent nationally in the same ten year period, fatalities have decreased by 109 percent, and non-fatal injuries have made a small decrease of .3 percent. The underground mining decrease in fatalities is no doubt reflective of the impact of the 1972 Mine, Safety, and Health Act. In all likelihood, non-fatal injuries would show even a larger decrease between 1965 and 1975 if present mine injury reporting requirements had been in effect during the 1965 reporting period.

1.9 Wages

National coal mining wages have consistently risen over the last twenty years at a rate that surpasses other categories of industry. In 1955, the average weekly earnings of a coal mining employee were $92.13; by 1965, average weekly earnings for coal employees had increased by 52 percent ($140.26); and from 1965 to 1975 coal employees' average weekly earnings had increased by 102 percent ($284.53 per week) (3, 4).

The national average weekly earnings for coal mining employees in 1977 were $313.24, while the weekly earnings for coal mining employees in the six ORBES states on an average were $275.15 or 14 percent less than the national average. On an individual basis, however, some states within the ORBES study show average weekly earnings for coal mining employees which were closer to the national average, such as Pennsylvania

TABLE 1.8

UNDERGROUND PRODUCTION BY TYPE OF MINING: 1965 AND 1975

	1965[1]				1975[2]			
	UNDERGROUND PRODUCTION (1000 TONS)	PERCENT MINED BY			UNDERGROUND PRODUCTION (1000 TONS)	PERCENT MINED BY		
		CONTINUOUS MINER	CUTTING MACHINE	LONGWALL MINING		CONTINUOUS MINER	CUTTING MACHINE	LONGWALL MINING
ILLINOIS	25,814	39	60	-	31,875	77	22	-
INDIANA	2,355	-	100	-	188	-	100	-
KENTUCKY	50,688	14	78	-	65,632	32	63	0.3
OHIO	11,268	46	54	-	15,455	65	34	-
PENNSYLVANIA	55,675	78	21	-	44,631	91	2	6
WEST VIRGINIA	134,064	47	47	-	88,357	70	25	3
TOTAL	279,864	46	49	-	246,138	64	31	0.2
UNITED STATES	332,661	43	54	-	292,826	63	32	3

SOURCE: [1] National Coal Association, Bituminous Coal Data, 1968 Edition, (Washington, D.C.: National Coal Association, 1969).

[2] National Coal Association, Coal Data 1976, (Washington, D.C.: National Coal Association, 1977).

TABLE 1.9

COAL MINING FATAL AND NON-FATAL INJURIES IN THE U.S. BY TYPE OF MINE: 1965 AND 1975

	1965[1]				1975[2]			
	FATAL INJURIES	RATE PER MILLION EMPLOYEE HOURS	NON-FATAL INJURIES	RATE PER MILLION EMPLOYEE HOURS	FATAL INJURIES	RATE PER MILLION EMPLOYEE HOURS	NON-FATAL INJURIES	RATE PER MILLION EMPLOYEE HOURS
UNDERGROUND	232	1.23	8,960	97.47	111	.48	8,654	37.11
SURFACE	19	.43	1,111	25.33	34	.35	1,650	17.14

SOURCE: [1] National Coal Association, Bituminous Coal Facts, 1972, (Washington, D.C.: National Coal Association, 1973).

[2] National Coal Association, Coal Data 1976, (Washington, D.C.: National Coal Association, 1977).

where coal mining employees earned average weekly wages of $290.25 in 1976--a figure only 7 percent less than the national average; and West Virginia coal mining employees earned average weekly wages of $286.69 in 1976--a figure which is 9 percent below the national average.

1.10 Quality of Life

There is a growing body of research that dispels previously accepted notions regarding the quality of life for coal miners. Contrary to accounts that thrive in both fiction and non-fiction publications, as well as media presentations, today's coal miner is no different from other middle Americans in the lifestyle they have and the values they hold (3, 4).

A recent study on Appalachian coal miners revealed that 63 percent owned their own homes and 75 percent owned property other than a home (1). More significant than the financial implications of property ownership, the study reported that being a coal miner is the basis for considerable pride among those questioned, and that alienation and dissatisfaction with one's work were noted only in a few instances (1).

In most analysis of American society, "Quality of Life" measurements generally hinge on two variables--financial security and job satisfaction. Current research findings, coupled with significant wage increases and improved working conditions as a result of the 1972 Mine, Safety, and Health Act, suggest that coal miners experience a quality of life which is personally satisfying and which is comparable to any other category of middle-class workers (1).

1.11 Summary

The ORBES region is the major coal producing area of the United States. Although its relative production has dropped since 1970, this region still produces more than 70 percent of the nation's coal.

The ORBES region still produces most of its coal from underground mines, although the tonnage produced by surface mines has steadily increased since 1970. However, with the enactment of the Surface Mining Control and Reclamation Act of 1977, it would appear unlikely that future increased rates of production, similar to those which occurred during the 1970's will take place.

The coal reserves in the ORBES region are indeed large--approximately 186 billion tons. However, the majority of these reserves are thought to be high sulfur coals and recoverable only by underground mining methods.

The demand for coal is becoming increasingly concentrated in the electric utilities' consumption of steam coal. The other market sectors are for coking coal and miscellaneous industrial uses. These latter market sectors have exhibited a weakened demand since 1970 and as a consequence, one might expect more and more metallurgical grade coals going to the steam coal market. At the present time, however, the future strength of the ORBES coal market appears to be inextricably linked with technologies that will permit the burning and other uses of high sulfur coal.

Mining technology has advanced to the point where production is limited only by demand. There is an adequate labor force to operate the machines and the wages are sufficiently competitive to attract new workers when the need arises.

It is clearly evident that ORBES not only has an ample supply of coal within its boundaries, but it also has the experience and technology to mine it. The future quantities of coal that will be mined in ORBES is simply a function of what future markets will demand.

REFERENCES

Chapter 1

1. Robert Althouse, Work, Safety and Lifestyle Among Southern Appalachian Coal Miners: A Survey of the Men of Standard Mines (Morgantown, West Virginia: Office of Research and Development, Appalachian Center, West Virginia University, 1974).

2. C. Milton Coughenour and A. Lee Coleman, Eastern Kentuckians View Their Quality of Life (RS-56) (Lexington, Kentucky: University of Kentucky Press, 1979).

3. National Coal Association, Bituminous Coal Data, 1968 Edition (Washington, D.C.: National Coal Association, 1969).

4. National Coal Association, Coal Data 1977 (Washington, D.C.: National Coal Association, 1979).

5. National Coal Association, Steam Electric Plant Factors 1977 (Washington, D.C.: National Coal Association, 1977).

6. U.S. Department of Energy, Energy Data Report, Coal--Bituminous and Lignite in 1976 (Washington, D.C.: Department of Energy, 1978).

7. U.S. Department of the Interior, Bureau of Mines, The Reserve Base of U.S. Coals by Sulfur Content (In Two Parts) 1. The Eastern States by Robert D. Thomson and Harold F. York (Washington, D.C.: Bureau of Mines, 1975).

2.0 SITING PROCEDURES FOR ORBES COAL MINES

The principal objective of the ORBES coal mine siting analysis is to project at the county level the number and type of new coal mines that would be opened in the ORBES region by the year 2000 under various scenario conditions and constraints. Among the conditions and constraints most influential upon the mine siting procedure are:

- The locational siting pattern of additional power plants in each scenario. (1)
- The total coal production specified for the year 2000 by the demand model. (6)
- The sources of high and low sulfur coal, by type of mine, specified by the coal supply analysis. (5)

The purpose of the coal mine siting analysis is to provide the number, county of location and type of mine which were used as data inputs for ORBES impact assessments on land use, public and occupational health, and employment (10, 7, 2).

The projection of the number of new coal mines as well as the geographic distribution of coal production by 2000 in the ORBES region is accomplished in two distinct phases or steps. The first phase, referred to as the assignment phase, consists of the judgemental assignment of coal from new mines in selected ORBES counties to specific power plants which are scheduled to come on-line between 1976 and 2000 by each scenario (1). In addition, certain existing power plants, that is, power plants which were in active service before 1976, are assigned a determined quantity of low sulfur coal from new mines in East Kentucky, West Virginia and Pennsylvania which, when mixed with coals from their traditional sources of supply, would permit them to meet the State Implementation Plan (SIP) specified by each scenario. These low sulfur coals are referred to as SIP coals throughout this report.

The second phase, referred to as the allocation phase, distributed the "remaining" coal tonnage to counties throughout the ORBES region. The term "remaining" is the difference between the total coal production in the ORBES region specified by the demand model and the tonnage assigned in the first phase. The allocation procedure is essentially a proration algorithm based on the coal production in each ORBES county during 1974, and the number of new "allocated" mines that are opened by

2000 is determined by the projected increase in county coal production between 1974 and 2000.

The sum of the number of new mines assigned in the first phase and the number of new mines allocated in the second phase constitute the total number of new coal mines that would be opened by 2000. The production from the new mines, combined with the production of the existing mines in the county comprise the total coal production specified by the demand model for the ORBES region.

2.01 Major Assumptions and Conditions

The following major assumptions, along with the rationale, were used in siting new coal mines in the ORBES region.

1. With the exception of Daviess and Gibson counties in Indiana, coal production through the year 2000 will occur only in those counties which produced coal in 1974. Although this appears to be a rather restrictive assumption, in reality it is not. Virtually all of the major coal producing counties still have large mineable reserves as well as a developed base of mine services and labor for continued operations. Moreover, with the exception of Illinois, almost all of the mineable reserve base is located in counties where mining is not taking place. And, since Illinois has the largest reserve base of coal in the Eastern United States, there are ample reserves in those counties where mining is now being carried on. In addition, many of the existing mines in the ORBES region are currently operating with excess capacity and if the demand for coal were to increase, then a large share of this increased demand could be satisfied by increased production from existing mining operations.

2. Power plants identified as "planned" or "scenario unit additions" by the siting model will use "local" coals. A "planned" power plant is one whose MW size and location has been announced by the electric utilities in 1976 as coming on-line after 1976. The on-line date is determined by each scenario. "Scenario unit addition" power plants are those plants identified by each scenario as coming on-line between 1985 and 2000 in order to meet the electrical generating capacity, or final demand, specified by the ORBES demand model. Finally, "local" coals refer to bituminous coals that are mined and consumed within the same state. The precedent for this assumption is well established at the present time. In chapter 1 it was pointed out that between 60 and 80 percent of the coal consumed in 1976 by ORBES region power plants was mined in the same state where it was burned. Further, it is assumed that all scenario unit addition power plants will have flue gas desulfurization capabilities that will permit them to burn high sulfur coal and still meet the air emission regulations specified by the various scenarios. Finally, the use of local coals implies, but does not verify, that the transportation cost component of delivered

coal to a power plant will be minimized.

3. The standard new mine size or capacity is 1.5 million tons per year (MMTPY). Admittedly, this is a large mine; more characteristic of mining activity in the thicker seams of the Eastern Interior Basin than in the thinner seams of Appalachia. In order to compensate for these regional differences, the assignment and allocation procedures have been designed to permit the opening of "1/3 mine" which, logically interpreted, refers to an individual mine with an annual capacity of 500,000 tons. Nevertheless, a recent Bureau of Mines (BOM) publication indicates that several underground and surface mines with 1.5 MMTPY capacity are planned or proposed for construction in every ORBES state (8). In actual fact however, the production capacity of a new mine is dependent on a wide variety of factors other than the thickness of the seam. The geologic conditions pertaining to the mine roof and floor, the mining methods employed, the physical characteristics of the coal and the proximity of the mine site to a major transportation medium are all considerations that will affect the productive capacity of a coal mine. Finally, this assumption also implies that the mining company responsible for the development of a 1.5 MMTPY mine has the fiscal, managerial and technical capabilities to build and operate a mine of this size in a most efficient manner.

4. Existing power plants will continue to purchase coal from the same sources as they did in 1976 (4). Unfortunately, this is not a realistic assumption. Some electric utilities, especially those who purchase coal from several suppliers, frequently change their source of coal supply. The principal reasons are to purchase coals which will meet federal and state emission regulations and the ability of the electric utility to secure more favorable price agreements. The purpose of this assumption is to provide a base year market production figure to which the coal requirements for future power plants can be appended.

5. The ORBES demand model assumes that all electrical generating power plants will operate at 50 percent of capacity with a thermal efficiency of 34.3 percent. Further, all power plants will burn coal with a Btu content of 12,450/lb. Given these parameters, each power plant in the ORBES region will burn 1,752 tons of coal per MW(e) per year.

2.1 Assigned ORBES Coal Mines

Coals from new mines are judgementally assigned from a list of candidate coal supplying counties in the ORBES region to scenario unit addition and planned power plants. Also, coal mines producing low sulfur (compliance) coal, used to meet SIP's, are assigned to certain existing power plants which in 1976 were burning coals with a sulfur content that exceeds the air quality parameters specified by various ORBES scenarios.

The assignment of a new coal mine to supply a particular power plant does not necessarily indicate that the total production from that mine is dedicated to that power plant. In fact, mine capacities often exceed the coal requirements of a specific plant, and the coal production beyond that assigned to a specific power plant simply enters other coal markets which are identified by the ORBES demand model.

The primary judgemental consideration in the assignment of new coal mines to supply scenario unit addition and planned power plants is the proximity of the mine to the power plant. The term "proximity" is used here as a surrogate for least cost distance; that is, the minimum cost required to ship coal from the mine to the power plant. Since the cost of coal shipments are generally much cheaper by barge than by rail or truck, paired counties of coal origin and destination which are both served by navigable waterways are considered to be "close" to one another in terms of total shipment costs. The major judgemental factor in the assignment of SIP coal to existing power plants is the history of coal mining in the county along with the county's reserve base of low sulfur coal.

Counties whose coal has been assigned to a specific power plant were selected from a list of candidate counties. The basic criteria for a county to be selected as a candidate county are: 1) the quantity of coal reserves, and 2) the magnitude of coal production in 1974. First, a list of ORBES counties was compiled in which the coal reserve base was generally greater than 100 million tons (9). Then, the candidate counties were selected from this list by deleting those counties in which no mining took place during 1974 (Daviess and Gibson counties in Indiana are exceptions).

2.11 Assigned SIP Coal Mines

For those scenarios which specify strict environmental controls, it is assumed that all existing and planned power plants which do not have, or plan to install, flue gas desulfurization equipment will burn compliance coals (3). For the ORBES study, compliance coals are defined as a mixture of coals for which the average sulfur content is 1.8 percent or less. The use of coals which average 1.8 percent sulfur will satisfy the requirements for the SIP's currently in effect in each ORBES state.

In order to meet the SIP requirements with a minimum disruption to the current pattern of coal purchases by the electric utilities, the following procedure was developed: The coal deliveries from each coal supplying state and/or region to each ORBES power plant during 1976 was examined regarding the tonnage and sulfur content (4). If the sulfur content of each delivery was greater than 1.8 percent, a portion of that delivery was "replaced" by a quantity of 1.0 percent sulfur coal such that the combined tonnage, equal to the original delivered quantity, had an average sulfur content of 1.8 percent. If the delivered tonnage had a sulfur content of 1.8 percent or less, it was assumed to be a compliance coal and no adjustments were made.

Although the future quantities of coal consumed by each power plant become fixed by the assumptions noted in section 2.01, the future sources and sulfur content of the coal is assumed to be the same as it was in 1976. Consequently, the total coal consumption, including the determined quantity of low sulfur coal, is proportionately adjusted to meet these assumptions.

Based on 1976 intra-ORBES shipments of coal, all power plants in the ORBES region of Illinois, Indiana and Kentucky that need 1.0 percent sulfur coal to meet the SIP requirements will be supplied by coal mines in East Kentucky. Similarly, power plants in Ohio and West Virginia will be supplied with 1.0 percent sulfur coal from West Virginia, and Pennsylvania power plants will be supplied by Pennsylvania coal mines.

Appendix Tables A-1A to A-1F show the quantities and origins of coals for existing ORBES power plants. The last column in each state Table shows the amount of SIP coal required for each existing power plant to meet the various scenario air quality requirements as well as the state which will supply the SIP coal.

After the total quantities of 1.0 percent sulfur coal has been determined for each existing and planned power plant in the ORBES region, the counties that will supply SIP coal are judgementally assigned. Tables A-2A to A-2C list the counties that will supply the SIP coal and the quantity of coal assigned to the power plants listed in Tables A-1A to A-1F.

2.12 Assigned Mines to Planned Power Plants

The Planned power plants are included in every ORBES scenario, although, their on-line date varies with respect to the assumptions applicable to each scenario. Consequently, only one set of coal mines is assigned to planned power plants and this set is repeated for each scenario.

If a planned power plant was identified in the EPA Utility FGD Survey as being equipped with flue gas desulfurization equipment, then a local coal was assigned. If a planned plant was not listed in the EPA Utility FGD Survey, then a compliance (low sulfur) coal was assigned from one or more counties in Eastern Kentucky, West Virginia, or Pennsylvania.

In general, planned power plants in Illinois, Indiana and Kentucky are judgementally assigned compliance coals from East Kentucky. Planned power plants in Ohio and West Virginia are assigned compliance coals from Southern West Virginia and planned power plants in Pennsylvania are assigned compliance coals from Eastern Pennsylvania. The basis for this assignment procedure is generally supported by the intra-ORBES coal shipments in 1976 (see Table 1.6).

The list of assigned coal mines to planned power plants is given in Table A-3.

2.13 Assigned Mines to Scenario Unit Addition Power Plants

Each major scenario defines a unique geographic distribution of power plant additions which, when added to the generating capacity of the existing and planned ORBES power plants, will supply the quantity of electric energy specified by the demand model. Coal assignments have been made for seven scenarios.

Scenario unit addition power plants are assumed to be capable of burning coal containing up to 4.5 percent sulfur without violating the air emission regulations that are applicable to each scenario. Given this assumption, there are virtually no restrictions on the assignment of coals to scenario unit addition power plants regarding the sulfur content of the coals. In keeping with the current pattern of ORBES coal shipments to power plants shown in Table 1.6, only local coals are assigned to scenario unit addition power plants. Moreover, the coal assignments are heavily influenced by the proximity (as discussed in section 2.1) of the coal supplying county to the county where the scenario unit addition power plant is scheduled to be built.

The assignment of local coals to scenario unit addition power plants are listed in Tables A-4A to A-10F.

2.2 Allocated ORBES Coal Mines

The second phase of the ORBES coal mine siting procedure distributes the "remaining" coal production--that is, the difference between the total coal production specified by the demand model and the tonnage produced by the assigned mine--among the coal producing counties in the ORBES region. The two major variables on which this allocating procedure is based are 1) the coal production which occurred in each ORBES county during 1974, and 2) the analysis of the ORBES coal supply by aggregated Bureau of Mines (BOM) districts (5).

In 1974, the ORBES region produced 439.7 million tons of coal. This production occurred, either wholly or in part, in BOM districts 1, 2, 3, 4, 6, 7, 8, 9, 10 and 11. As a highly generalized observation, virtually all of the high sulfur coal (greater than 1.8 percent total sulfur, by weight) in the ORBES region was produced in BOM districts 2, 4, 6, 9, 10 and 11. In addition approximately 60 percent of the 1974 coal production in districts 1 and 3 was estimated to be high sulfur coals. The 1974 coal production from BOM districts 7 and 8, along with the remaining production from districts 1 and 3, was primarily low sulfur coal. Table 2.1 shows the percentage of 1974 production that came from these aggregated BOM districts.

TABLE 2.1

PERCENTAGE OF 1974 ORBES COAL PRODUCTION BY TYPE OF MINE

BOM Districts	Underground	Surface	Total
1 & 3	9.4	8.6	18.0
7 & 8	20.6	12.0	32.6
2,4,6,9,10,11	22.4	27.0	49.4
TOTAL	52.4	47.6	100.0

It is assumed in the ORBES scenarios that the production of high and low sulfur coal will occur in the same BOM districts as it did in 1974. However, by 2000 the impact of governmental regulations and the depletion effects of easily mineable coal seams will bring about a shift in the type of mining. Based largely on the coal supply work of Page, the projected breakdown of ORBES coal production in 2000, by type of mining, is given in Table 2.2 (5).

TABLE 2.2

PERCENTAGE OF 2000 ORBES COAL PRODUCTION BY TYPE OF MINE

BOM Districts	Underground	Surface	Total
1 & 3	9.9	9.0	18.9
7 & 8	25.6	7.6	33.2
2,4,6,9,10,11	23.2	24.7	47.9
TOTAL	58.7	41.3	100.0

A comparison of Tables 2.1 and 2.2 emphasizes that the total coal production from each aggregated supply region is almost the same, proportionately, in 1974 and 2000. The differences between the two

Tables are in the type of mining employed to achieve their respective output.

One of the several calculations performed by the ORBES demand model is the total regional coal production in the year 2000 for each scenario. The allocation procedure begins by multiplying the total coal production figure by each of the percentages shown in Table 2.2. The end result of this operation is a broad geographic overview of the projected tonnages of high and low sulfur coals, by type of mining, for the ORBES region. Further, these derived data are used as inputs to the coal supply analysis (5). In addition, from these derived data, one can make a first estimate of the number of new standard coal mines (1.5 million tons/year) that would need to be opened to meet the increased production from 1974. These data are presented in Tables A-11A to A-11G.

The second step is to disaggregate the production estimates in Tables A-11A-G into individual BOM districts, or, in the case of BOM districts 1 and 8 which cross state lines, into state specific sub-districts. This disaggregation is performed prorata to the 1974 coal production in each district and sub-district. Again, an estimate is made concerning the number of new standard coal mines, by type of mine, that would be opened in order to meet the increased production. These disaggregated BOM district tonnages are shown in Tables A-12A to A-12G.

The third and final step disaggregates the BOM district and sub-district totals in Tables 2.14A-G to county production estimates. Again, the disaggregation procedure is prorata to the county's 1974 coal production. However, in carrying out this third step, the production from the assigned mines (Tables A-2A-C, A-3, Tables A-4A to A-10F) is assumed to be part of the total production for the county.

Thus, through a series of iterative steps, the underground and surface production for each county is calculated subject to the constraints that the county production sum is equal to the BOM district estimates in Tables A-12A-G and that each county to which mines have been assigned must produce the quantity assigned to it.

After the estimated county level production has been determined, the actual number of assigned mines, by mine type, is subtracted from the estimated number of new mines shown in Table A-14. The difference, if positive, is then allocated to counties in proportion to their projected increase in coal production, 1974 to 2000. These mines are referred to as allocated mines.

County level estimates of coal production in 2000, by type of mine, as well as the total number of new mines--both assigned and allocated-- are shown in Tables A-13A to A-19G. Data on the number of new mines, by type of mine and scenario are shown in Figures 1 to 14.

REFERENCES

Chapter 2

1. Gary L. Fowler, University of Illinois at Chicago Circle; Robert E. Bailey, The Ohio State University; J.C. Randolph, Indiana University; and Steven I. Gordon, The Ohio State University, "The Ohio River Basin Energy Facility Siting Model", Ohio River Basin Energy Study Phase II, Grant Nos. EPA R805588, R805589, and R805609 and Subcontract under Prime Contract EPA R805588 (forthcoming).

2. Steven I. Gordon and Anna S. Graham, The Ohio State University, "Regional Socioeconomic Impacts of the Ohio River Basin Energy Study Scenarios", Ohio River Basin Energy Study Phase II, Grant No. EPA R805589 (forthcoming).

3. M. Melia, M. Smith, T. Koger, and B. Laseke, *EPA Utility FGD Survey: August-September 1978* (Cincinnati: REDCo Environmental, Inc., 1979).

4. National Coal Association, *Steam Electric Plant Factors 1977* (Washington, D.C.: National Coal Association, 1977.

5. Walter P. Page, West Virginia University, "An Economic Analysis of Coal Supply in the Ohio River Basin Energy Study Region", Ohio River Basin Energy Study Phase II, Grant No. EPA R805585 (forthcoming).

6. Walter P. Page, West Virginia University, and Doug Gilmore and Geoffrey Hewings, University of Illinois at Urbana-Champaign, "An Energy and Fuel Demand Model for the Ohio River Basin Study Region", Ohio River Basin Energy STudy Phase II, Grant No. EPA R805585 and Subcontract under Prime Contract EPA R805588 (forthcoming).

7. Maurice A. Shapiro, University of Pittsburgh, "Ohio River Basin Energy Study: Health Aspects", Ohio River Basin Energy Study Phase II, Grant No. EPA R805608 and Subcontract under Prime Contract EPA R805588 (forthcoming).

8. U.S. Department of the Interior, Bureau of Mines, *Projects to Expand Fuel Sources in Eastern States*, by Staff, Eastern Field Operation Center, Pittsburgh, PA (Washington, D.C.: U.S. Government Printing Office, 1976.

9. U.S. Department of the Interior, Bureau of Mines, *The Reserve Base of U.S. Coals by Sulfur Content (In Two Parts) 1. The Eastern States*, by Robert D. Thomson and Harold F. York (Washington D.C.: Bureau of Mines, 1975).

10. Daniel E. Willard, Michael A. Ewert, Mary Ellen Hogan, and Jeffrey D. Martin, Indiana University, "A Land Use Analysis of Existing and Potential Coal Surface Mining Areas in the Ohio River Basin Energy Study Region", Ohio River Basin Energy Study Phase II, Subcontract under Prime Contract EPA R805588 (forthcoming).

3. APPENDIX

Preceding page blank

TABLE A-1A. QUANTITY AND ORIGIN OF ORBES STEAM COAL: 1985 and 2000

ILLINOIS

POWER PLANT[1]	MEGAWATTS COAL				MMTPY COAL[3]		MMTPY Delivered from[4]												E. Ky. SIP Coal[5]	
	TOTAL		SUBJECT TO SIP[2]				Illinois		Indiana		E. Ky.		W. Ky.		West U.S.		East U.S.			
	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000
Duck Creek	817	1917	0	0	1.43	3.36	1.43	3.36												
Edwards	780	644	780	644	1.37	1.13	.82	.67			.01	.01			.54	.45				
Wallace	200	0	200	0	.35	0					.06				.29					
Coffeen	1006	1006	1006	1006	1.76	1.76	.53	.53											1.24	1.24
Grand Tower	195	0	195	0	.34	0	.14												.20	
Hustonville	150	0	150	0	.26	0	.04		.08										.14	
Meredosia	239	0	239	0	.42	0	.20												.22	
Kincaid	1320	1320	1320	1320	2.31	2.31	.56	.56											1.75	1.75
Powerton	1786	1786	1340	1340	3.13	3.13	1.44	1.44							.13	.13			1.56	1.56
Joppa	1098	0	1098	0	1.92	0	.67		.01		.12		.21						.92	
Baldwin	1800	1800	1800	1800	3.15	3.15	1.26	1.26											1.89	1.89
Hennepin	306	0	306	0	.54	0	.06		.01		.01		.11				.01		.34	
Vermillion	182	0	182	0	.32	0	.13												.20	
Wood River	500	0	500	0	.88	0	.18				.01		.01		.68					
Marion	272	346	99	0	.48	.61	.36	.61											.12	
Dallman	372	372	180	180	.65	.65	.44	.44											.21	.21
Lakeside	96	38	96	38	.17	.07	.06	.02											.11	.05
Venice #2	198	0	198	0	.35	0					.35									
Pearl Station	427	427	27	27	.75	.75	.71	.71											.04	.04
Newton	1817	1817	0	0	3.18	3.18	3.18	3.18												
Havana	450	450	450	450	.79	.79					.79	.79								
LaSalle Co.	550	550	0	0	.96	.96	.96	.96												
TOTALS	14561	12473	10166	6805	25.51	21.85	13.17	13.74	.10	0	1.35	.80	.33	0	1.64	.58	.01	0	8.94	6.74

Sources: See page 36

TABLE A-1B: QUANTITY AND ORIGIN OF ORBES STEAM COAL: 1985 and 2000

INDIANA

POWER PLANT[1]	MEGAWATTS COAL				MMTPY COAL[3]		MMTPY Delivered from[4]												E. Ky SIP Coal[5]	
	TOTAL		SUBJECT TO SIP[2]				Indiana		West U.S.		E. Ky.		W. Ky.		Illinois		W. Va.			
	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000
Crawfordsville	25	0	25	0	.04	0	.02												.02	
Frankfort	27	0	27	0	.05	0	.02												.03	
Hoosier	232	232	232	232	.41	.41	.17	.17											.24	.24
Breed	496	0	496	0	.87	0	.27												.60	
Tanners Creek*	1101	0	1101	0	1.93	0	.02		.05		.19		.37				.04		1.14	
Clifty Creek	1350	0	1350	0	2.37	0	.34						.42						1.61	
Perry W	12	0	12	0	.02	0	.01												.01	
Petersburg	1788	1788	724	724	3.13	3.13	2.37	2.37			.01	.01							.76	.76
Pritchard	302	0	302	0	.53	0	.29												.25	
Stout	699	471	600	471	1.22	.83	.70	.47											.53	.36
Logansport	43	0	43	0	.08	0	.08													
Schahfer	1077	1077	1077	1077	1.89	1.89			1.89	1.89										
Peru	40	0	40	0	.07	0	.02												.05	
Cayuga	1062	1062	1062	1062	1.86	1.86	1.25	1.25											.61	.61
Gallagher	600	0	600	0	1.05	0	.22				.01		.13				.01		.69	
Gibson	2600	2600	2600	2600	4.56	4.56	.70	.70							.35	.35			3.50	3.50
Wabash River	964	387	964	387	1.69	.68	1.04	.42			.01								.64	.26
Whitewater	193	160	93	60	.34	.28	.22	.20			.06	.04							.06	.04
Culley	419	369	419	369	.73	.65	.25	.22											.49	.43
Warrick	731	323	731	323	1.28	.57	.49	.22											.79	.35
Merom	980	980	0	0	1.72	1.72	1.72	1.72												
Rockport	2600	2600	2600	2600	4.56	4.56	1.92	1.92											2.64	2.64
Brown	265	1265	0	0	.46	2.22	.46	2.22												
Patriot	650	650	0	0	1.14	1.14	1.14	1.14												
TOTALS	18256	13964	15197	9905	32.00	24.50	13.72	13.02	1.94	1.89	.28	.05	.92	0	.35	.35	.05	0	14.66	9.19

*1985 coal deliveries also include .01 MMTPY from Ohio and .12 from other Eastern U.S.

Sources: See page 36

TABLE A-1C: QUANTITY AND ORIGIN OF ORBES STEAM COAL: 1985 and 2000

KENTUCKY

POWER PLANT[1]	MEGAWATTS COAL				MMTPY COAL[3]		MMTPY Delivered from[4]												E. Ky. SIP Coal[5]	
	TOTAL		SUBJECT TO SIP[2]				W. Ky.		Indiana		Ohio		E. Ky.		Illinois		Other			
	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000
Coleman	690	690	450	450	1.21	1.21	.69	.69	.03	.03	.02	.02	.02	.02					.46	.46
Reid	366	70	366	70	.64	.12	.16	.04					.01						.47	.09
Cooper	354	354	354	354	.62	.62							.29	.29			.09	.09	.23	.23
Dale	176	0	176	0	.31	0							.31							
Henderson	58	29	58	29	.10	.05	.03	.01											.08	.04
Big Sandy	1097	816	1097	816	1.92	1.43							1.92	1.43						
Brown	734	440	734	440	1.29	.77							1.29	.77						
Ghent	1650	2200	1650	1650	2.89	3.85	.09	1.05	.80	.80			.19	.19					1.81	1.81
Green River	189	0	125	0	.33	0	.16						.08						.09	
Pineville	35	0	35	0	.06	0							.06							
Tyrone	75	0	75	0	.13	0							.13							
Cane Run	1017	481	373	0	1.78	.84	1.30	.84											.48	
Mill Creek	1632	1632	0	0	2.86	2.86	2.86	2.86												
Smith	399	250	399	250	.70	.44	.22	.13											.48	.31
Paradise	2558	1150	2558	1150	4.48	2.01	1.09	.49											3.40	1.53
Shawnee	1750	0	1750	0	3.07	0	.52						.24		.41		.03		1.87	
Spurlock	800	800	300	300	1.40	1.40	.88	.88					.53	.53						
Green	480	480	0	0	.84	.84	.84	.84												
East Bend	1200	1800	0	0	2.10	3.15	2.10	3.15												
Trimble Co.	990	2340	0	0	1.73	4.10	1.73	4.10												
Lewis Co.	2600	2600	2600	2600	4.56	4.56													4.56	4.56
TOTALS	18850	16132	13100	8109	33.02	28.26	12.67	15.08	.83	.83	.02	.02	5.07	3.23	.41		.12*	.09	13.93	9.03

* .09 from E. U.S.
.03 from W. U.S.

Sources: See page 36

TABLE A-1D: QUANTITY AND ORIGIN OF ORBES STEAM COAL: 1985 and 2000

OHIO

	MEGAWATTS COAL						MMTPY Delivered from[4]												W. Va. SIP Coal[5]	
	TOTAL		SUBJECT TO SIP[2]		MMTPY COAL[3]		Ohio		E. Ky.		W. Ky.		Penn.		W. Va.		E & W US.			
POWER PLANT[1]	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000
Cardinal	1795	1795	1795	1795	3.14	3.14	.68	.68	.43	.43					.52	.52			1.52	1.52
Miami Fort	1163	1000	1163	1000	2.04	1.75	.31	.27	.36	.31	.46	.39	.03	.02					.88	.76
Beckjord	1195	434	1195	434	2.09	.76	.32	.12	.59	.22	.34	.13	.03	.01	.01				.81	.29
Conesville	1981	1606	1175	800	3.47	2.81	1.89	1.74											1.58	1.07
Pickway	85	0	85	0	.15	0	.04												.11	
Poston	966	806	160	0	1.69	1.41	1.51	1.41											.19	
Tait	294	0	294	0	.52	0	.07		.44						.01					
Hutchings	276	0	276	0	.48	0			.46						.01		.01			
Stuart	2440	2440	2440	2440	4.27	4.27	1.61	1.61	1.69	1.69					.97	.97				
Hamilton	37	27	37	27	.06	.05			.06	.04					.01	.01				
Burger	425	0	426	0	.74	0	.18		.09						.04				.43	
Niles	230	0	230	0	.40	0	.12						.04		.01				.25	
Sammis	2392	1630	2392	1630	4.19	2.86	1.28	.87	.05	.04			.08	.05	.18	.13	.01	.01	2.61	1.77
Gavin	2600	2600	2600	2600	4.56	4.56	.61	.61	.13	.13					.06	.06	2.05	2.05	1.70	1.70
Muskingum Riv.	1507	811	1507	811	2.64	1.42	.53	.29											2.12	1.14
Kyger Creek	1085	0	1085	0	1.90	0	.20								.26				1.44	
Piqua	35	0	35	0	.06	0	.04		.03											
Killen	1200	1200	0	0	2.10	2.10	2.10	2.10												
TOTALS	19706	14349	16894	11537	34.50	25.13	11.49	9.70	4.33	2.86	.80	.52	.18	.08	2.08	1.69	2.07	2.06	13.64	8.25

Sources: See page 36

TABLE A-1E. QUANTITY AND ORIGIN OF ORBES STEAM COAL: 1985 and 2000

PENNSYLVANIA

	MEGAWATTS COAL						MMTPY Delivered from[4]											
	TOTAL		SUBJECT TO SIP[2]		MMTPY COAL[3]		Penn.		Ohio		E. Ky.		W. Va.		East U.S.		Penn. SIP Coal[5]	
POWER PLANT[1]	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000
Cheswick	570	570	570	570	1.00	1.00	.69	.69					.04	.04			.27	.27
Elrama	494	0	0	0	.87	0	.78						.09					
Phillips	230	0	0	0	.40	0	.40											
Conemaugh	1640	1640	1640	1640	2.87	2.87	1.77	1.77									1.11	1.11
Homer City	2013	2013	2013	2013	3.53	3.53	2.01	2.01									1.51	1.51
Keystone	1640	1640	1640	1640	2.87	2.87	2.09	2.09									.78	.78
Seward	1018	800	218	0	1.78	1.40	1.62	1.23									.17	.17
Shawville	642	0	642	0	1.12	0	.82										.31	
Mansfield	2751	2751	0	0	4.82	4.82	2.03	2.03	1.88	1.88			.53	.53	.39	.39		
New Castle	409	0	409	0	.72	0	.31		.01						.01		.39	
Armstrong	360	0	360	0	.63	0	.56										.07	
Hatfield Ferry	1660	1660	1660	1660	2.91	2.91	.99	.99	.01	.01	.08	.08	.98	.98			.86	.86
Mitchell	291	0	291	0	.51	0	.01						.21				.29	
Low.Armstrong	1260	1260	0	0	2.21	2.21	2.21	2.21										
TOTALS	14978	12334	9443	7523	26.24	21.61	16.29	13.02	1.90	1.89	.08	.08	1.85	1.55	.40	.39	5.76	4.70

Sources: See page 36

TABLE A-1F. QUANTITY AND ORIGIN OF ORBES STEAM COAL: 1985 and 2000

WEST VIRGINIA

POWER PLANT[1]	MEGAWATTS COAL				MMTPY COAL[3]		MMTPY Delivered from[4]										W. Va. SIP Coal[5]	
	TOTAL		SUBJECT TO SIP[2]				W. Va.		E. Ky.		East U.S.		Ohio		Penn.			
	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000	1985	2000
Amos	2932	2932	2932	2932	5.14	5.14	4.73	4.73	.22	.22	.19	.19						
Kanawha River	440	0	440	0	.77	0	.77											
Sporn	1108	0	1108	0	1.94	0	.59		.84		.48		.04					
Albright	292	0	292	0	.51	0	.51											
Fort Martin	1107	1107	1107	1107	1.94	1.94	.66	.66	.55	.55					.07	.07	.66	.66
Harrison	1920	1920	1920	1920	3.36	3.36	1.02	1.02	.68	.68							1.66	1.66
Rivesville	94	0	94	0	.16	0	.16											
Willow Island	188	0	188	0	.33	0	.33											
Kammer	714	0	714	0	1.25	0	.30										.95	
Mitchell	1476	1476	1476	1476	2.59	2.59	.61	.61	.69	.69	.03	.03	.01	.01			1.25	1.25
Mount Storm	1695	1695	1695	1695	2.97	2.97	2.00	2.00			.97	.97						
Pleasants	1252	1252	0	0	2.19	2.19	2.19	2.19										
New Haven	1300	1300	1300	1300	2.28	2.28											2.28	2.28
TOTALS	14518	11682	13266	10430	25.43	20.47	13.87	11.21	2.98	2.14	1.67	1.19	.05	.01	.07	.07	6.80	5.85

Sources: See page 36

SOURCES

TABLES A-1A to A-1F

1. Steven D. Jansen, University of Illinois at Chicago Circle, "Electrical Generating Unit Inventory, 1976-1986: Illinois, Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia, "Ohio River Basin Energy Study Phase II, Grant No. EPA R805590 (Washington, D.C., November 1978).

2. MW which are _not_ listed as having flue gas desulfurization capabilities. M. Melia, M. Smith, T. Koger, and B. Laseke, _EPA Utility FGD Survey: August-September 1978_ (Cincinnati: REDCo Environmental, Inc., 1979).

3. Derived by multiplying the number of megawatts in columns 1 and 2 by .001752, which is millions of tons of coal per MW per year required to operate a power plant according to ORBES demand model assumptions.

4. Deliveries are prorated according to the sulfur content of the 1976 deliveries as listed in _Steam Electric Plant Factors, 1977_, National Coal Association (Washington, D.C., 1977).

5. Derived by subtracting the sum of "MMTPY Delivered" from "MMTPY Coal."

TABLE A-2A. COAL SUPPLIES FROM EAST KENTUCKY TO ORBES SIP PLANTS IN ILLINOIS, INDIANA AND KENTUCKY

Origin			Destination
County	Mine No.*	Mine Size	Power Plant Name; (Millions of Tons)
Pike	#1	1.5U	Paradise (1.50)
Pike	#2	1.5U	Baldwin (1.50)
Pike	#3	1.5U	Coffeen (1.24); Breed (.10); Henderson (.08); Peru (.05); Frankfort (.03)
Pike	#4	0.5U	Meredosia (.22); Hustonville (.14); Marion (.12)
Pike	#5	0.5U	Baldwin (.39); Lakeside (.11)
Pike	#6	0.5U	Joppa (.50)
Pike	#9	0.5S	Joppa (.42); Whitewater (.06); Crawfordsville (.02)
Bell	#2	0.5U	Coleman (.46); Pearl Station (.04)
Bell	#5	1.5S	Shawnee (1.50)
Bell	#6	1.5S	Stout (.53); Culley (.49); Dallman (.21); Kincaid (.25); Perry W (.01)
Leslie	#1	0.5U	Clifty Creek (.50)
Leslie	#3	1.5S	Paradise (1.50)
Knott	#1	1.5U	Clifty Creek (1.11); Shawnee (.37)
Knott	#4	0.5U	Breed (.50)
Breathitt	#2	1.5S	Ghent (1.50)
Breathitt	#3	1.5S	Gibson (1.50)
Breathitt	#4	1.5S	Gibson (1.50)
Breathitt	#5	0.5S	Gibson (.50)
Floyd	#2	1.5U	Kincaid (1.50)
Perry	#1	1.5U	Powerton (1.50)
Perry	#3	0.5S	Paradise (.40); Vermillion (.10)
Perry	#4	1.5S	Gallagher (.69); Reid (.47); Hoosier (.24); Powerton (.06)
Magoffin	#3	0.5S	Wabash River (.14); Ghent (.31)
Letcher	#1	1.5U	Smith (.48); Pritchard (.25); Hennepin (.34); Cayuga (.12); Grand Tower (.20)
Letcher	#3	0.5S	Petersburg (.50)
Johnson	#2	0.5S	Cayuga (.50)
Johnson	#3	0.5S	Wabash River (.50)
Harlan	#2	1.5U	Cane Run (.48); Cooper (.23); warrick (.79)
Martin	#1	1.5U	Tanners Creek (1.14); Petersburg (.25)

* Arbitrary Mine Number. U = Underground, S = Surface

TABLE A-2B. COAL SUPPLIES FROM WEST VIRGINIA TO ORBES SIP PLANTS IN OHIO AND WEST VIRGINIA

Origin			Destination
County	Mine No.*	Mine Size	Power Plant Name; (millions of Tons)
Boone	#1	1.5U	Cardinal (1.50)
Boone	#2	0.5U	Beckjord (.50)
Boone	#3	0.5U	Fort Martin (.50)
Boone	#4	0.5S	Fort Martin (.16); Beckjord (.31); Cardinal (.02)
Wyoming	#1	1.5U	Conesville (1.50)
Wyoming	#2	1.5U	Sammis (1.50)
Logan	#1	1.5U	Muskingum River (1.50)
Logan	#2	0.5U	Miami Fort (.50)
Raleigh	#1	1.5U	Harrison (1.50)
Raleigh	#2	1.5U	Miami Fort (.38); Sammis (1.11)
Raleigh	#3	0.5U	Muskingum River (.12); Harrison (.16)
Kanawha	#2	0.5U	Muskingum River (.50)
Kanawha	#3	1.5S	Mitchell (1.25); Niles (.25)
Mingo	#1	1.5U	Kammer (.95); Burger (.43); Pickway (.11)
Fayette	#3	0.5U	Conesville (.08); Poston (.19); Gavin (.20)
McDowell	#1	1.5U	Gavin (1.50)
Nicholas	#1	1.5U	Kyger Creek (1.44)

*An arbitrary Mine Number. U = Underground, S = Surface

TABLE A-2C. COAL SUPPLIES FROM PENNSYLVANIA TO ORBES SIP PLANTS IN PENNSYLVANIA

Origin			Destination
County	Mine No.*	Mine Size	Power Plant Name; (Millions of Tons)
Washington	#1	1.5U	Cheswick (.27); Keystone (.78); Mitchell (.29)
Greene	#1	1.5U	Hatfield Ferry (.86); New Castle (.39); Armstrong (.07)
Cambria	#1	0.5U	Homer City (1.50)
Indiana	#2	1.5U	Conemaugh (1.11); Seward (.17)
Clearfield	#2	0.5S	Shawville (.31)

*An arbitrary Mine Number. U = Underground, S = Surface

TABLE A-3. COAL ASSIGNMENTS TO "PLANNED" POWER PLANTS

Planned Power Plant Addition	Megawatts		Supplying County	Compliance Coal?	Type of Mine	No. of Mines	Million Tons	
	1976	2000					Mine Size	Total Tons
Duck Creek, IL	417	1917	Perry, IL	no	U	2	1.5	3.0
			Knox, IL	no	S	1	1.5	1.5
Marion, IL	99	346	Williamson, IL	no	U	1	1.0	1.0
Dallman, IL	180	372	Christian, IL	no	U	1	1.0	1.0
Pearl Station, IL	27	427	Jackson, IL	no	S	1	1.0	1.0
Newton, IL	0	1817	Douglas, IL	no	U	1	1.5	1.5
			Saline, IL	no	U	2	1.5	3.0
Havana, IL	0	450	Martin, KY	yes	S	1	1.5	1.5
LaSalle Co., IL	0	550	Montgomery, IL	no	U	1	1.5	1.5
Petersburg, IN	724	1788	Pike, IN	no	U	1	1.5	1.5
			Pike, IN	no	S	1	1.5	1.5
			Daviess, IN	no	S	1	1.5	1.5
Schahfer, IN	521	1077	Western U.S.	yes	-	-	-	-
Gibson, IN	1300	2600	Wabash, IL	yes	U	1	0.5	0.5
			Johnson, KY	yes	U	2	1.5	3.0
			Leslie, KY	yes	U	2	1.5	3.0
Whitewater, IN	93	160	Fountain, IN	no	S	1	0.5	0.5
Merom, IN	0	980	Sullivan, IN	no	U	1	1.5	1.5
			Sullivan, IN	no	S	1	1.0	1.0
Rockport, IN	0	2600	Wayne, WV	yes	S	1	0.5	0.5
			McDowell, WV	yes	U	2	1.5	3.0
			Kanawha, WV	yes	U	2	1.5	3.0
Brown, IN	0	1265	Gibson, IN	no	U	2	1.5	3.0
Patriot, IN	0	650	Warrick, IN	no	S	1	1.5	1.5
Coleman, KY	450	690	Daviess, KY	no	S	1	1.5	1.5
			Daviess, KY	no	S	1	1.0	1.0
Ghent, KY	550	2200	Union, KY	no	U	1	1.5	1.5
			Union, KY	no	S	1	1.5	1.5
			Hopkins, KY	no	U	1	1.5	1.5
			Hopkins, KY	no	S	1	1.0	1.0
Mill Creek, KY	712	1632	Muhlenberg, KY	no	S	2	1.5	3.0
			Ohio, KY	no	S	1	1.0	1.0
Spurlock, KY	0	800	Webster, KY	no	U	1	1.5	1.5
			Webster, KY	no	U	1	0.5	0.5

Preceding page blank

TABLE A-3 con't.

Planned Power Plant Addition	Megawatts		Supplying County	Compliance Coal?	Type of Mine	No.of Mines	Million Tons	
	1976	2000					Mine Size	Total Tons
Green,KY	0	480	Webster,KY	no	U	1	1.5	1.5
East Bend,KY	0	1800	Henderson,KY	no	U	2	1.5	3.0
			Union,KY	no	U	1	1.5	1.5
Trimble,KY	0	2340	McLean,KY	no	U	2	1.5	3.0
			Butler,KY	no	S	2	1.5	3.0
Lewis,KY	0	2600	Clay,KY	yes	S	1	0.5	0.5
			Bell,KY	yes	U	2	1.5	3.0
			Letcher,KY	yes	U	2	1.5	3.0
Conesville,OH	1578	1606	Coshocton,OH	no	S	2	1.5	3.0
			Tuscarawas,OH	no	S	1	1.0	1.0
Poston,OH	200	806	Athens,OH	no	U	1	1.5	1.5
			Athens,OH	no	S	1	0.5	0.5
Killen,OH	0	1200	Meigs,OH	no	U	2	1.5	3.0
Seward,PA	253	800	Somerset,PA	no	U	1	1.5	1.5
			Somerset,PA	no	U	1	0.5	0.5
Mansfield,PA	917	2751	Beaver,PA	no	S	1	0.5	0.5
			Washington,PA	no	U	2	1.5	3.0
			Greene,PA	no	U	2	1.5	3.0
Lower Armstrong,PA	0	1260	Armstrong,PA	no	U	2	1.5	3.0
Pleasants,WV	0	1252	Marshall,WV	no	U	2	1.5	3.0
New Haven,WV	0	1300	Mingo,WV	yes	U	2	1.5	3.0
TOTAL	8021	40516			U=50 S=24	74		99.0

TABLE A-4A COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 1: ILLINOIS

Power Plant Site	MW	Supplying County	Type of Mine	No. of Mines	Million Tons Mine Size	Million Tons Total Tons
Mercer	1300	Randolph	S	2	1.5	3.0
Edwards	1300	Wabash	U	2	1.5	3.0
Scott	1300	Macoupin	U	2	1.5	3.0
Henry	1300	Stark	S	2	1.5	3.0
White	1300	Jefferson	U	2	1.5	3.0
Gallatin	1300	Gallatin	U	2	1.5	3.0
Pulaski	650	Williamson	U	1	1.5	1.5
TOTAL	8450		U=9 S=4	13		19.5

TABLE A-4B. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 1: INDIANA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Switzerland	1300	Pike	U	2	1.5	3.0
Ohio	1300	Sullivan	U	2	1.5	3.0
Jefferson	650	Knox	U	1	1.5	1.5
Starke	650	Vermillion	U	1	1.5	1.5
Pulaski	650	Vigo	U	1	1.5	1.5
Jasper	650	Vigo	U	1	1.5	1.5
Warrick	1300	Warrick	U	1	1.5	1.5
		Warrick	S	1	1.5	1.5
Harrison	1300	Sullivan	U	1	1.5	1.5
		Sullivan	S	1	1.5	1.5
Greene	1300	Clay	S	1	1.5	1.5
		Greene	U	1	1.5	1.5
Floyd	1300	Gibson	U	2	1.5	3.0
Franklin	650	Daviess	U	1	1.5	1.5
Lawrence	650	Knox	U	1	1.5	1.5
TOTAL	11700		U=15 S=3	18		27.0

TABLE A-4C. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 1: KENTUCKY

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Bracken	1300	Pike	U	3	0.5	1.5
		Knott	U	3	0.5	1.5
Gallatin	1300	Union	U	2	1.5	3.0
Oldham	1300	Henderson	U	2	1.5	3.0
Mason	1300	Breathitt	S	2	1.5	3.0
Boone	1300	Hopkins	U	1	1.5	1.5
		Hopkins	S	1	1.5	1.5
Breckinridge	1300	Ohio	U	1	1.5	1.5
		Ohio	S	1	1.5	1.5
Anderson	650	Leslie	S	1	1.5	1.5
Henry	650	Magoffin	U	2	0.5	1.0
		Leslie	U	1	0.5	0.5
Meade	1300	Webster	U	2	1.5	3.0
TOTAL	10400		U=17 S=5	22		24.0

TABLE A-4D. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 1: OHIO

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Brown	1300	Jefferson	U	2	1.5	3.0
Pike	1300	Athens	U	2	1.5	3.0
Warren	650	Belmont	U	1	1.5	1.5
Guernsey	650	Guernsey	U	1	1.5	1.5
Harrison	650	Harrison	U	1	1.5	1.5
Perry	650	Perry	S	1	1.5	1.5
Noble	650	Belmont	S	1	1.5	1.5
Knox	650	Tuscarawas	S	1	1.5	1.5
Holmes	650	Tuscarawas	U	1	1.5	1.5
Union	650	Harrison	S	1	1.5	1.5
Fayette	650	Belmont	U	1	1.5	1.5
Hardin	650	Columbiana	S	1	1.5	1.5
Highland	650	Belmont	U	1	1.5	1.5
Morrow	650	Harrison	U	1	1.5	1.5
Madison	650	Muskingum	S	1	1.5	1.5
Mercer	650	Muskingum	U	1	1.5	1.5
Fairfield	650	Perry	U	1	1.5	1.5
Crawford	650	Harrison	U	1	1.5	1.5
TOTAL	13000		U=14 S=6	20		30.0

TABLE A-4E. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 1: PENNSYLVANIA

Power Plant site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Greene	650	Greene	U	1	1.5	1.5
Clarion	1950	Clearfield	U	1	1.5	1.5
		Clarion	U	2	1.5	3.0
Venango	1950	Armstrong	U	3	1.5	4.5
Jefferson	1300	Jefferson	U	2	1.5	3.0
Clearfield	650	Clearfield	S	1	1.5	1.5
Somerset	650	Somerset	U	1	1.5	1.5
Butler	1300	Butler	S	2	1.5	3.0
Elk	650	Clearfield	S	1	1.5	1.5
TOTAL	9100		U=10 S=4	14		21.0

TABLE A-4F. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 1: WEST VIRGINIA

Power Plant Site	MW	Supplying County	Type of Mine	No. of Mines	Million Tons Mine Size	Million Tons Total Tons
Wayne	1300	Mingo	U	2	1.5	3.0
Jackson	1300	Kanawha	S	2	1.5	3.0
Pleasants	650	Harrison	U	3	0.5	1.5
Wetzel	1300	Marion	U	2	1.5	3.0
Tyler	1300	Barbour	U	2	1.5	3.0
Cabell	1300	Logan	U	2	1.5	3.0
Taylor	650	Taylor	U	1	1.5	1.5
Mingo	650	Mingo	S	1	1.5	1.5
Fayette	650	Fayette	S	1	1.5	1.5
TOTAL	9100		U=12 S=4	16		21.0

TABLE A-5A. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2: ILLINOIS

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Mercer	1300	Randolph	S	2	1.5	3.0
Edwards	1300	Wabash	U	2	1.5	3.0
Scott	1300	Macoupin	U	2	1.5	3.0
Henry	1300	Stark	S	2	1.5	3.0
Menard	1300	Franklin	U	2	1.5	3.0
Schuyler	1300	Fulton	S	2	1.5	3.0
Putnam	650	Peoria	S	1	1.5	1.5
TOTAL	8450		U=6 S=7	13		19.5

TABLE A-5B. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2: INDIANA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Switzerland	1300	Pike	U	2	1.5	3.0
Ohio	1300	Sullivan	U	2	1.5	3.0
Jefferson	650	Knox	U	1	1.5	1.5
Starke	650	Vermillion	U	1	1.5	1.5
Pulaski	650	Vigo	U	1	1.5	1.5
Jasper	650	Vigo	U	1	1.5	1.5
Warrick	1300	Warrick	U	1	1.5	1.5
		Warrick	S	1	1.5	1.5
Floyd	1300	Gibson	U	2	1.5	3.0
Dearborn	1300	Sullivan	U	1	1.5	1.5
		Sullivan	S	1	1.5	1.5
Perry	1300	Daviess	U	1	1.5	1.5
		Knox	S	1	1.5	1.5
Crawford	1300	Clay	S	1	1.5	1.5
		Greene	U	1	1.5	1.5
TOTAL	11700		U=14 S=4	18		27.0

TABLE A-5C. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2: KENTUCKY

Power Plant Site	MW	Supplying County	Type of Mine	No. of Mines	Million Tons Mine Size	Million Tons Total Tons
Bracken	1300	Pike	U	3	0.5	1.5
		Knott	U	3	0.5	1.5
Gallatin	1300	Union	U	2	1.5	3.0
Oldham	1300	Henderson	U	2	1.5	3.0
Mason	1300	Breathitt	S	2	1.5	3.0
Boone	1300	Hopkins	U	1	1.5	1.5
		Hopkins	S	1	1.5	1.5
Breckinridge	1300	Ohio	U	1	1.5	1.5
		Ohio	S	1	1.5	1.5
Campbell	1300	Muhlenberg	U	1	1.5	1.5
		McLean	U	1	1.5	1.5
Meade	1300	Webster	U	2	1.5	3.0
TOTAL	10400		U=16 S=4	20		24.0

TABLE A-5D. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2: OHIO

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Brown	1300	Jefferson	U	2	1.5	3.0
Morgan	650	Perry	S	1	1.5	1.5
Clermont	1300	Belmont	U	2	1.5	3.0
Washington	1300	Harrison	U	2	1.5	3.0
Lawrence	1300	Athens	U	1	1.5	1.5
		Athens	S	1	1.5	1.5
Monroe	1300	Columbiana	S	1	1.5	1.5
		Monroe	U	1	1.5	1.5
Muskingum	1300	Muskingum	U	1	1.5	1.5
		Muskingum	S	1	1.5	1.5
Athens	1300	Athens	U	2	1.5	3.0
Belmont	1300	Belmont	U	1	1.5	1.5
		Belmont	S	1	1.5	1.5
Scioto	650	Vinton	S	1	1.5	1.5
TOTAL	11700		U=12 S=6	18		27.0

TABLE A-5E. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2: PENNSYLVANIA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Greene	650	Greene	U	1	1.5	1.5
Clarion	1300	Clarion	U	2	1.5	3.0
Venango	1300	Clearfield	S	1	1.5	1.5
		Armstrong	U	1	1.5	1.5
Jefferson	650	Jefferson	U	1	1.5	1.5
Clearfield	650	Clearfield	S	1	1.5	1.5
Butler	1300	Butler	S	2	1.5	3.0
Washington	1300	Washington	U	2	1.5	3.0
Lawrence	1300	Greene	U	2	1.5	3.0
Mercer	650	Mercer	U	1	1.5	1.5
TOTAL	9100		U=10 S=4	14		21.0

TABLE A-5F. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2: WEST VIRGINIA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Wayne	1300	Mingo	U	2	1.5	3.0
Jackson	1300	Kanawha	S	2	1.5	3.0
Pleasants	650	Harrison	U	3	0.5	1.5
Wetzel	1300	Marion	U	2	1.5	3.0
Tyler	1300	Barbour	U	2	1.5	3.0
Brooke	1300	Marshall	U	2	1.5	3.0
Wood	1300	Nicholas	U	2	1.5	3.0
Ohio	650	Marshall	U	1	1.5	1.5
TOTAL	9100		U=14 S=2	16		21.0

TABLE A-6A. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2a: ILLINOIS

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Mercer	1300	Randolph	S	2	1.5	3.0
Edwards	1300	Wabash	U	2	1.5	3.0
Scott	1300	Macoupin	U	2	1.5	3.0
Henry	1300	Stark	S	2	1.5	3.0
Menard	1300	Franklin	U	2	1.5	3.0
Schuyler	1300	Fulton	S	2	1.5	3.0
Putnam	650	Peoria	S	1	1.5	1.5
TOTAL	8450		U=6 S=7	13		19.5

TABLE A-6B. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2a: INDIANA

					Million Tons	
Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Mine Size	Total Tons
Switzerland	1300	Pike	U	2	1.5	3.0
Ohio	1300	Sullivan	U	2	1.5	3.0
Jefferson	650	Knox	U	1	1.5	1.5
Starke	650	Vermillion	U	1	1.5	1.5
Pulaski	650	Vigo	U	1	1.5	1.5
Jasper	650	Vigo	U	1	1.5	1.5
Warrick	1300	Warrick	U	1	1.5	1.5
		Warrick	S	1	1.5	1.5
Floyd	1300	Gibson	U	2	1.5	3.0
Dearborn	1300	Sullivan	U	1	1.5	1.5
		Sullivan	S	1	1.5	1.5
Perry	1300	Daviess	U	1	1.5	1.5
		Knox	S	1	1.5	1.5
Crawford	1300	Clay	S	1	1.5	1.5
		Greene	U	1	1.5	1.5
TOTAL	11700		U=14 S=4	18		27.0

TABLE A-6C. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2a: KENTUCKY

Power Plant Site	MW	Supplying County	Type of Mine	No. of Mines	Million Tons Mine Size	Million Tons Total Tons
Bracken	2600	Pike	U	3	0.5	1.5
		Knott	U	3	0.5	1.5
		Leslie	U	1	0.5	0.5
		Leslie	S	1	1.5	1.5
		Magoffin	U	2	0.5	1.0
Gallatin	1300	Union	U	2	1.5	3.0
Oldham	1300	Henderson	U	2	1.5	3.0
Mason	1300	Breathitt	S	2	1.5	3.0
Boone	1300	Hopkins	U	1	1.5	1.5
		Hopkins	S	1	1.5	1.5
Breckinridge	1300	Ohio	U	1	1.5	1.5
		Ohio	S	1	1.5	1.5
Campbell	1300	Muhlenberg	U	1	1.5	1.5
		McLean	U	1	1.5	1.5
Meade	1300	Webster	U	2	1.5	3.0
TOTAL	11700		U=19 S=5	24		27.0

TABLE A-6D. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2a: OHIO

Power Plant Site	MW	Supplying County	Type of Mine	No. of Mines	Million Tons Mine Size	Million Tons Total Tons
Brown	2600	Jefferson	S	1	1.5	1.5
		Jefferson	U	3	1.5	4.5
Pike	2600	Athens	U	1	1.5	1.5
		Athens	S	1	1.5	1.5
		Perry	U	1	1.5	1.5
		Perry	S	1	1.5	1.5
Morgan	650	Tuscarawas	S	1	1.5	1.5
Clermont	1300	Harrison	U	2	1.5	3.0
Washington	2600	Tuscarawas	U	2	1.5	3.0
		Harrison	U	1	1.5	1.5
		Harrison	S	1	1.5	1.5
Lawrence	2600	Vinton	S	1	1.5	1.5
		Meigs	U	1	1.5	1.5
		Belmont	S	1	1.5	1.5
		Belmont	U	1	1.5	1.5
Monroe	2600	Monroe	U	1	1.5	1.5
		Columbiana	U	2	1.5	3.0
		Columbiana	S	1	1.5	1.5
Muskingum	2600	Guernsey	U	2	1.5	3.0
		Muskingum	U	1	1.5	1.5
		Muskingum	S	1	1.5	1.5
Athens	1300	Athens	U	2	1.5	3.0
Hamilton	650	Stark	S	1	1.5	1.5
Belmont	1300	Belmont	U	2	1.5	3.0
Scioto	650	Carroll	S	1	1.5	1.5
TOTAL	21450		U=22 S=11	33		49.5

TABLE A-6E. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2a: PENNSYLVANIA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total tons
Greene	650	Greene	U	1	1.5	1.5
Clarion	2600	Clearfield	U	2	1.5	3.0
		Clarion	U	2	1.5	3.0
Venango	2600	Greene	U	2	1.5	3.0
		Armstrong	U	2	1.5	3.0
Jefferson	650	Jefferson	U	1	1.5	1.5
Clearfield	650	Clearfield	S	1	1.5	1.5
Butler	1300	Butler	S	2	1.5	3.0
Washington	1300	Washington	U	2	1.5	3.0
Lawrence	1950	Washington	U	1	1.5	1.5
		Greene	U	2	1.5	3.0
Mercer	650	Mercer	U	1	1.5	1.5
TOTAL	12350		U=16 S=3	19		28.5

TABLE A-6F. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2a: WEST VIRGINIA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Wayne	2600	Logan	U	2	1.5	3.0
		Mingo	U	2	1.5	3.0
Jackson	2600	Kanawha	U	2	1.5	3.0
		Kanawha	S	2	1.5	3.0
Pleasants	650	Harrison	U	3	0.5	1.5
Wetzel	2600	Marion	U	2	1.5	3.0
		Monongalia	U	2	1.5	3.0
Tyler	2600	Preston	U	2	1.5	3.0
		Barbour	U	2	1.5	3.0
Brooke	2600	Marshall	U	4	1.5	6.0
Wood	1950	Nicholas	U	3	1.5	4.5
Ohio	650	Ohio	U	1	1.5	1.5
TOTAL	16250		U=25 S=2	27		37.5

Table A-7A. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2b: ILLINOIS

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Mercer	1300	Randolph	S	2	1.5	3.0
Edwards	1300	Wabash	U	2	1.5	3.0
Scott	1300	Macoupin	U	2	1.5	3.0
Henry	1300	Stark	S	2	1.5	3.0
Menard	1300	Franklin	U	2	1.5	3.0
Schuyler	1300	Fulton	S	2	1.5	3.0
Putnam	650	Peoria	S	1	1.5	1.5
TOTAL	8450		U=6 S=7	13		19.5

TABLE A-7B. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2b: INDIANA

Power Plant Site	MW	Supplying County	Type of Mine	No. of Mines	Million Tons Mine Size	Million Tons Total Tons
Switzerland	1300	Pike	U	2	1.5	3.0
Ohio	1300	Sullivan	U	2	1.5	3.0
Jefferson	650	Knox	U	1	1.5	1.5
Starke	650	Vermillion	U	1	1.5	1.5
Pulaski	650	Vigo	U	1	1.5	1.5
Jasper	650	Vigo	U	1	1.5	1.5
Warrick	1300	Warrick	U	1	1.5	1.5
		Warrick	S	1	1.5	1.5
Floyd	1300	Gibson	U	2	1.5	3.0
Dearborn	1300	Sullivan	U	1	1.5	1.5
		Sullivan	S	1	1.5	1.5
Perry	1300	Daviess	U	1	1.5	1.5
		Knox	S	1	1.5	1.5
Crawford	1300	Clay	S	1	1.5	1.5
		Greene	U	1	1.5	1.5
TOTAL	11700		U=14 S=4	18		27.0

TABLE A-7C. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2b: KENTUCKY

Power Plant Site	MW	Supplying County	Type of Mine	No. of Mines	Million Tons Mine Size	Million Tons Total Tons
Bracken	1300	Pike	U	3	0.5	1.5
		Knott	U	3	0.5	1.5
Gallatin	1300	Union	U	2	1.5	3.0
Oldham	1300	Henderson	U	2	1.5	3.0
Mason	1300	Breathitt	S	2	1.5	3.0
Boone	1300	Hopkins	U	1	1.5	1.5
		Hopkins	S	1	1.5	1.5
Breckinridge	1300	Ohio	U	1	1.5	1.5
		Ohio	S	1	1.5	1.5
Campbell	1300	Muhlenberg	U	1	1.5	1.5
		McLean	U	1	1.5	1.5
Meade	1300	Webster	U	2	1.5	3.0
TOTAL	10400		U=16 S=4	20		24.0

TABLE A-7D. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2b: OHIO

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Brown	1300	Jefferson	U	2	1.5	3.0
Pike	1300	Guernsey	U	2	1.5	3.0
Morgan	650	Perry	S	1	1.5	1.5
Clermont	1300	Belmont	U	2	1.5	3.0
Washington	1300	Harrison	U	2	1.5	3.0
Lawrence	1300	Athens	U	1	1.5	1.5
		Athens	S	1	1.5	1.5
Monroe	1300	Columbiana	S	1	1.5	1.5
		Monroe	U	1	1.5	1.5
Muskingum	1300	Muskingum	U	1	1.5	1.5
		Muskingum	S	1	1.5	1.5
Athens	1300	Athens	U	2	1.5	3.0
Belmont	1300	Belmont	U	1	1.5	1.5
		Belmont	S	1	1.5	1.5
Scioto	650	Vinton	S	1	1.5	1.5
TOTAL	13000		U=14 S=6	20		30.0

TABLE A-7E. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2b: PENNSYLVANIA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Greene	650	Greene	U	1	1.5	1.5
Clarion	1300	Clarion	U	2	1.5	3.0
Venango	1300	Clearfield Armstrong	S U	1 1	1.5 1.5	1.5 1.5
Jefferson	650	Jefferson	U	1	1.5	1.5
Clearfield	650	Clearfield	S	1	1.5	1.5
Butler	1300	Butler	S	2	1.5	3.0
Washington	1300	Washington	U	2	1.5	3.0
Lawrence	1300	Greene	U	2	1.5	3.0
Mercer	650	Mercer	U	1	1.5	1.5
TOTAL	9100		U=10 S=4	14		21.0

TABLE A-7F. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 2b: WEST VIRGINIA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Wayne	1300	Mingo	U	2	1.5	3.0
Jackson	1300	Kanawha	S	2	1.5	3.0
Pleasants	650	Harrison	U	3	0.5	1.5
Wetzel	1300	Marion	U	2	1.5	3.0
Tyler	1300	Barbour	U	2	1.5	3.0
Brooke	1300	Marshall	U	2	1.5	3.0
Wood	1300	Nicholas	U	2	1.5	3.0
Ohio	650	Marshall	U	1	1.5	1.5
TOTAL	9100		U=14 S=2	16		21.0

TABLE A-8A. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 3: ILLINOIS

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Mercer	1300	Randolph	S	2	1.5	3.0
Edwards	1300	Wabash	U	2	1.5	3.0
Scott	1300	Macoupin	U	2	1.5	3.0
Henry	1300	Stark	S	2	1.5	3.0
Menard	650	Franklin	U	1	1.5	1.5
TOTAL	5850		U=5 S=4	9		13.5

TABLE A-8B. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 3: INDIANA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Switzerland	1300	Pike	U	2	1.5	3.0
Ohio	1300	Sullivan	U	2	1.5	3.0
Jefferson	650	Knox	U	1	1.5	1.5
Starke	650	Vermillion	U	1	1.5	1.5
Pulaski	650	Vigo	U	1	1.5	1.5
Jasper	650	Vigo	U	1	1.5	1.5
Warrick	650	Warrick	S	1	1.5	1.5
Dearborn	1300	Sullivan	U	1	1.5	1.5
		Sullivan	S	1	1.5	1.5
Perry	1300	Daviess	U	1	1.5	1.5
		Knox	S	1	1.5	1.5
TOTAL	8450		U=10 S=3	13		19.5

TABLE A-8C. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 3: KENTUCKY

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Bracken	1300	Pike	U	3	0.5	1.5
		Knott	U	3	0.5	1.5
Gallatin	1300	Union	U	2	1.5	3.0
Oldham	1300	Henderson	U	2	1.5	3.0
Mason	1300	Breathitt	S	2	1.5	3.0
Boone	1300	Hopkins	U	1	1.5	1.5
		Hopkins	S	1	1.5	1.5
Meade	650	Webster	U	1	1.5	1.5
TOTAL	7150		U=12 S=3	15		16.5

TABLE A-8D. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 3: OHIO

Power Plant Site	MW	Supplying County	Type of Mine	No. of Mines	Million Tons Mine Size	Million Tons Total Tons
Brown	1300	Jefferson	U	2	1.5	3.0
Morgan	650	Perry	S	1	1.5	1.5
Clermont	1300	Belmont	U	2	1.5	3.0
Washington	1300	Harrison	U	2	1.5	3.0
Lawrence	1300	Athens	U	1	1.5	1.5
		Athens	S	1	1.5	1.5
Monroe	1300	Columbiana	S	1	1.5	1.5
		Monroe	U	1	1.5	1.5
Muskingum	1300	Muskingum	U	1	1.5	1.5
		Muskingum	S	1	1.5	1.5
Athens	650	Athens	U	1	1.5	1.5
TOTAL	9100		U=10 S=4	14		21.0

TABLE A-8E. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 3: PENNSYLVANIA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Greene	650	Greene	U	1	1.5	1.5
Clarion	1300	Clarion	U	2	1.5	3.0
Venango	1300	Clearfield	S	1	1.5	1.5
		Armstrong	U	1	1.5	1.5
Jefferson	650	Jefferson	U	1	1.5	1.5
Washington	1300	Washington	U	2	1.5	3.0
Lawrence	650	Greene	U	1	1.5	1.5
TOTAL	5850		U=8 S=1	9		13.5

TABLE A-8F. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 3: WEST VIRGINIA

Power Plant Site	MW	Supplying County	Type of Mine	No. of Mines	Million Tons Mine Size	Million Tons Total Tons
Wayne	1300	Mingo	U	2	1.5	3.0
Jackson	1300	Kanawha	S	2	1.5	3.0
Pleasants	650	Harrison	U	3	0.5	1.5
Wetzel	1300	Marion	U	2	1.5	3.0
Tyler	650	Barbour	U	1	1.5	1.5
Brooke	1300	Marshall	U	2	1.5	3.0
TOTAL	6500		U=10 S=2	12		15.0

TABLE A-9A. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 4: ILLINOIS

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Mercer	1300	Randolph	S	2	1.5	3.0
Edwards	1300	Wabash	U	2	1.5	3.0
TOTAL	2600		U=2 S=2	4		6.0

TABLE A-9B. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 4: INDIANA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Switzerland	1300	Pike	U	2	1.5	3.0
Ohio	1300	Sullivan	U	2	1.5	3.0
Jefferson	650	Knox	U	1	1.5	1.5
Dearborn	1300	Sullivan	U	1	1.5	1.5
		Sullivan	S	1	1.5	1.5
TOTAL	4550		U=6 S=1	7		10.5

TABLE A-9C. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 4: KENTUCKY

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Bracken	1300	Pike	U	3	0.5	1.5
		Knott	U	3	0.5	1.5
Gallatin	1300	Union	U	2	1.5	3.0
Oldham	650	Henderson	U	1	1.5	1.5
TOTAL	3250		U=9	9		7.5

TABLE A-9D. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 4: OHIO

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Brown	1300	Jefferson	U	2	1.5	3.0
Morgan	650	Perry	S	1	1.5	1.5
Clermont	1300	Belmont	U	2	1.5	3.0
Washington	1300	Harrison	U	2	1.5	3.0
Lawrence	650	Athens	U	1	1.5	1.5
TOTAL	5200		U=7 S=1	8		12.0

TABLE A-9E. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 4: PENNSYLVANIA

Power Plant Site	MW	Supplying County	Type of Mine	No. of Mines	Million Tons Mine Size	Million Tons Total Tons
Greene	650	Greene	U	1	1.5	1.5
Clarion	650	Clarion	U	1	1.5	1.5
Washington	1300	Washington	U	2	1.5	3.0
TOTAL	2600		U=4	4		6.0

TABLE A-9F. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 4: WEST VIRGINIA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Wayne	1300	Mingo	U	2	1.5	3.0
Jackson	1300	Kanawha	S	2	1.5	3.0
Pleasants	650	Harrison	U	3	0.5	1.5
Brooke	650	Marshall	U	1	1.5	1.5
TOTAL	3900		U=6 S=2	8		9.0

TABLE A-10A. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 5: ILLINOIS

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Mercer	1300	Randolph	S	2	1.5	3.0
Edwards	1300	Wabash	U	2	1.5	3.0
Scott	1300	Macoupin	U	2	1.5	3.0
Henry	1300	Stark	S	2	1.5	3.0
Menard	650	Franklin	U	1	1.5	1.5
Schuyler	650	Fulton	S	1	1.5	1.5
TOTAL	6500		U=5 S=5	10		15.0

TABLE A-10B. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 5: INDIANA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Switzerland	1300	Pike	U	2	1.5	3.0
Ohio	1300	Sullivan	U	2	1.5	3.0
Jefferson	650	Knox	U	1	1.5	1.5
Starke	650	Vermillion	U	1	1.5	1.5
Pulaski	650	Vigo	U	1	1.5	1.5
Jasper	650	Vigo	U	1	1.5	1.5
Warrick	1300	Warrick	U	1	1.5	1.5
		Warrick	S	1	1.5	1.5
Dearborn	1300	Sullivan	U	1	1.5	1.5
		Sullivan	S	1	1.5	1.5
Perry	1300	Daviess	U	1	1.5	1.5
		Knox	S	1	1.5	1.5
Crawford	650	Clay	S	1	1.5	1.5
TOTAL	9750		U=11 S=3	14		22.5

TABLE A-10C. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 5: KENTUCKY

Power Plant Site	MW	Supplying County	Type of Mine	No. of Mines	Million Tons Mine Size	Million Tons Total Tons
Bracken	1300	Pike	U	3	0.5	1.5
		Knott	U	3	0.5	1.5
Gallatin	1300	Union	U	2	1.5	3.0
Oldham	1300	Henderson	U	2	1.5	3.0
Mason	1300	Breathitt	S	2	1.5	3.0
Boone	1300	Hopkins	U	1	1.5	1.5
		Hopkins	S	1	1.5	1.5
Breckinridge	650	Ohio	S	1	1.5	1.5
Meade	1300	Webster	U	2	1.5	3.0
TOTAL	8450		U=13 S=4	17		19.5

TABLE A-10D. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 5: OHIO

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Brown	1300	Jefferson	U	2	1.5	3.0
Pike	650	Guernsey	U	1	1.5	1.5
Morgan	650	Perry	S	1	1.5	1.5
Clermont	1300	Belmont	U	2	1.5	3.0
Washington	1300	Harrison	U	2	1.5	3.0
Lawrence	1300	Athens	U	1	1.5	1.5
		Athens	S	1	1.5	1.5
Monroe	1300	Columbiana	S	1	1.5	1.5
		Monroe	U	1	1.5	1.5
Muskingum	1300	Muskingum	U	1	1.5	1.5
		Muskingum	S	1	1.5	1.5
Athens	1300	Athens	U	2	1.5	3.0
Belmont	650	Belmont	S	1	1.5	1.5
TOTAL	11050		U=12 S=5	17		25.5

TABLE A-10E. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 5: PENNSYLVANIA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Greene	650	Greene	U	1	1.5	1.5
Clarion	1300	Clarion	U	2	1.5	3.0
Venango	1300	Clearfield	S	1	1.5	1.5
		Armstrong	U	1	1.5	1.5
Jefferson	650	Jefferson	U	1	1.5	1.5
Washington	1300	Washington	U	2	1.5	3.0
Lawrence	1300	Greene	U	2	1.5	3.0
Mercer	650	Mercer	U	1	1.5	1.5
TOTAL	7150		U=10 S=1	11		16.5

TABLE A-10F. COAL ASSIGNMENTS TO SCENARIO ADDITION POWER PLANTS

SCENARIO 5: WEST VIRGINIA

Power Plant Site	MW	Supplying County	Type of Mine	No.of Mines	Million Tons Mine Size	Million Tons Total Tons
Wayne	1300	Mingo	U	2	1.5	3.0
Jackson	1300	Kanawha	S	2	1.5	3.0
Pleasants	650	Harrison	U	3	0.5	1.5
Wetzel	1300	Marion	U	2	1.5	3.0
Tyler	1300	Barbour	U	2	1.5	3.0
Brooke	1300	Marshall	U	2	1.5	3.0
Wood	650	Nicholas	U	1	1.5	1.5
TOTAL	7800		U=12 S=2	14		18.0

TABLE A-11A. PRODUCTION AND CONSUMPTION OF ORBES COAL IN 2000 BY AGGREGATED BUREAU OF MINES (BOM) DISTRICTS AND SULFUR CONTENT

SCENARIO 1

COAL PRODUCTION
(Millions of tons per year(MMTPY)

	High Sulfur (1.8%)		Low Sulfur (1.8%)		
BOM Districts*	Underground	Surface	Underground	Surface	Total
1 & 3	50.766	46.301	31.512	28.741	157.320
7 & 8	0	0	212.242	63.040	275.282
2,4,6,9,10,11	193.029	204.969	0	0	397.998
TOTAL	243.795	251.270	243.754	91.781	830.600

NUMBER OF NEW MINES
(1.5 MMTPY Capacity)

	High Sulfur (1.8%)		Low Sulfur (1.8%)		
BOM Districts*	Underground	Surface	Underground	Surface	Total
1 & 3	18	16	11	10	55
7 & 8	0	0	65	20	85
2,4,6,9,10,11	60	64	0	0	124
TOTAL	78	80	76	30	264

COAL CONSUMPTION
(MMTPY from Demand Model)

Sector	High Sulfur	Low Sulfur	Total
Coal Mining	2.1	2.0	4.1
Fossil Elec. Util.	185.1	68.4	253.5
Ore Reduction	0	42.0	42.0
Chemical Feedstock	2.8	0	2.8
Misc. Thermal Uses	0	64.3	64.3
SUBTOTAL	190.0	176.7	366.7
Export	305.1	158.8	463.9
TOTAL	495.1	335.5	830.6

---

* Districts 1, 7 and 8 have been adjusted to include only those portions of the district located in the ORBES region.

TABLE A-11B. PRODUCTION AND CONSUMPTION OF ORBES COAL IN 2000 BY AGGREGATED BUREAU OF MINES (BOM) DISTRICTS AND SULFUR CONTENT

SCENARIO 2

COAL PRODUCTION
(Millions of tons per year(MMTPY)

	High Sulfur (1.8%)		Low Sulfur (1.8%)		
BOM Districts*	Underground	Surface	Underground	Surface	Total
1 & 3	49.843	45.459	30.940	28.218	154.459
7 & 8	0	0	208.384	61.894	270.278
2,4,6,9,10,11	189.520	201.243	0	0	390.763
TOTAL	239.363	246.702	239.324	90.112	815.500

NUMBER OF NEW MINES
(1.5 MMTPY Capacity)

	High Sulfur (1.8%)		Low Sulfur (1.8%)		
BOM Districts*	Underground	Surface	Underground	Surface	Total
1 & 3	17	15	11	10	53
7 & 8	0	0	63	19	82
2,4,6,9,10,11	58	61	0	0	119
TOTAL	75	76	74	29	254

COAL CONSUMPTION
(MMTPY from Demand Model)

Sector	High Sulfur	Low Sulfur	Total
Coal Mining	2.1	2.0	4.1
Fossil Elec. Util.	210.9	37.4	248.3
Ore Reduction	0	41.9	41.9
Chemical Feedstock	2.8	0	2.8
Misc. Thermal Uses	0	63.0	63.0
SUBTOTAL	215.8	144.3	360.1
Export	270.3	185.1	455.4
TOTAL	486.1	329.4	815.5

* Districts 1, 7 and 8 have been adjusted to include only those portions of the district located in the ORBES region.

TABLE A-11C. PRODUCTION AND CONSUMPTION OF ORBES COAL IN 2000 BY AGGREGATED BUREAU OF MINES (BOM) DISTRICTS AND SULFUR CONTENT

SCENARIO 2a

COAL PRODUCTION
(Millions of tons per year(MMTPY)

	High Sulfur (1.8%)		Low Sulfur (1.8%)		
BOM Districts*	Underground	Surface	Underground	Surface	Total
1 & 3	54.793	49.974	34.013	31.021	169.801
7 & 8	0	0	229.082	68.041	297.123
2,4,6,9,10,11	208.344	221.232	0	0	429.576
TOTAL	263.137	271.206	263.095	99.062	896.500

NUMBER OF NEW MINES
(1.5 MMTPY Capacity)

	High Sulfur (1.8%)		Low Sulfur (1.8%)		
BOM Districts*	Underground	Surface	Underground	Surface	Total
1 & 3	20	19	13	12	64
7 & 8	0	0	77	23	100
2,4,6,9,10,11	70	75	0	0	145
TOTAL	90	94	90	35	309

COAL CONSUMPTION
(MMTPY from Demand Model)

Sector	High Sulfur	Low Sulfur	Total
Coal Mining	2.5	2.0	4.5
Fossil Elec. Util.	245.8	37.4	283.2
Ore Reduction	0	42.1	42.1
Chemical Feedstock	2.8	0	2.8
Misc. Thermal Uses	0	63.3	63.3
SUBTOTAL	251.1	144.8	395.9
Export	283.2	217.4	500.6
TOTAL	534.3	362.2	896.5

---

* Districts 1, 7 and 8 have been adjusted to include only those portions of the district in the ORBES region.

TABLE A-11D. PRODUCTION AND CONSUMPTION OF ORBES COAL IN 2000 BY AGGREGATED BUREAU OF MINES (BOM) DISTRICTS AND SULFUR CONTENT

SCENARIO 2b

COAL PRODUCTION
(Millions of tons per year(MMTPY)

	High Sulfur (1.8%)		Low Sulfur (1.8%)		
BOM Districts*	Underground	Surface	Underground	Surface	Total
1 & 3	49.965	45.571	31.016	28.288	154.839
7 & 8	0	0	208.896	62.045	270.941
2,4,6,9,10,11	189.984	201.736	0	0	391.720
TOTAL	239.949	247.307	239.912	90.333	817.500

NUMBER OF NEW MINES
(1.5 MMTPY Capacity)

	High Sulfur (1.8%)		Low Sulfur (1.8%)		
BOM Districts*	Underground	Surface	Underground	Surface	Total
1 & 3	17	16	11	10	54
7 & 8	0	0	63	19	82
2,4,6,9,10,11	58	62	0	0	120
TOTAL	75	78	74	29	256

COAL CONSUMPTION
(MMTPY from Demand Model)

Sector	High Sulfur	Low Sulfur	Total
Coal Mining	2.1	2.0	4.1
Fossil Elec. Util.	210.9	37.4	248.3
Ore Reduction	0	42.1	42.1
Chemical Feedstock	2.9	0	2.9
Misc. Thermal Uses	0	63.7	63.7
SUBTOTAL	215.9	145.2	361.1
Export	271.4	185.0	456.4
TOTAL	487.3	330.2	817.5

* Districts 1, 7 and 8 have been adjusted to include only those portions of the district in the ORBES region.

TABLE A-11E. PRODUCTION AND CONSUMPTION OF ORBES COAL IN 2000 BY AGGREGATED BUREAU OF MINES (BOM) DISTRICTS AND SULFUR CONTENT

SCENARIO 3

COAL PRODUCTION
(Millions of tons per year(MMTPY)

BOM Districts*	High Sulfur (1.8%) Underground	High Sulfur (1.8%) Surface	Low Sulfur (1.8%) Underground	Low Sulfur (1.8%) Surface	Total
1 & 3	42.784	39.021	26.558	24.222	132.584
7 & 8	0	0	178.870	53.128	231.998
2,4,6,9,10,11	162.678	172.740	0	0	335.418
TOTAL	205.462	211.761	205.428	77.350	700.000

NUMBER OF NEW MINES
(1.5 MMTPY Capacity)

BOM Districts*	High Sulfur (1.8%) Underground	High Sulfur (1.8%) Surface	Low Sulfur (1.8%) Underground	Low Sulfur (1.8%) Surface	Total
1 & 3	12	11	8	7	38
7 & 8	0	0	43	13	56
2,4,6,9,10,11	40	42	0	0	82
TOTAL	52	53	51	20	176

COAL CONSUMPTION
(MMTPY from Demand Model)

Sector	High Sulfur	Low Sulfur	Total
Coal Mining	2.1	2.0	4.1
Fossil Elec. Util.	177.3	37.4	214.7
Ore Reduction	0	35.0	35.0
Chemical Feedstock	2.8	0	2.8
Misc. Thermal Uses	0	52.6	52.6
SUBTOTAL	182.2	127.0	309.2
Export	235.0	155.8	390.8
TOTAL	417.2	282.8	700.0

* Districts 1, 7 and 8 have been adjusted to include only those portions of the district located in the ORBES region.

TABLE A-11F. PRODUCTION AND CONSUMPTION OF ORBES COAL IN 2000 BY AGGREGATED BUREAU OF MINES (BOM) DISTRICTS AND SULFUR CONTENT

SCENARIO 4

COAL PRODUCTION
(Millions of tons per year(MMTPY)

BOM Districts*	High Sulfur (1.8%) Underground	High Sulfur (1.8%) Surface	Low Sulfur (1.8%) Underground	Low Sulfur (1.8%) Surface	Total
1 & 3	32.607	29.739	20.241	18.460	101.047
7 & 8	0	0	136.325	40.491	176.816
2,4,6,9,10,11	123.984	131.653	0	0	255.637
TOTAL	156.591	161.392	156.566	58.951	533.500

NUMBER OF NEW MINES
(1.5 MMTPY Capacity)

BOM Districts*	High Sulfur (1.8%) Underground	High Sulfur (1.8%) Surface	Low Sulfur (1.8%) Underground	Low Sulfur (1.8%) Surface	Total
1 & 3	6	5	4	3	18
7 & 8	0	0	15	5	20
2,4,6,9,10,11	14	15	0	0	29
TOTAL	20	20	19	8	67

COAL CONSUMPTION
(MMTPY from Demand Model)

Sector	High Sulfur	Low Sulfur	Total
Coal Mining	1.4	1.3	2.7
Fossil Elec. Util.	142.0	37.4	179.4
Ore Reduction	0	43.9	43.9
Chemical Feedstock	0.6	0	0.6
Misc. Thermal Uses	0	9.0	9.0
SUBTOTAL	144.0	91.6	235.6
Export	174.0	123.9	297.9
TOTAL	318.0	215.5	533.5

* Districts 1, 7 and 8 have been adjusted to include only those portions of the district located in the ORBES region.

TABLE A-11G. PRODUCTION AND CONSUMPTION OF ORBES COAL IN 2000 BY AGGREGATED BUREAU OF MINES (BOM) DISTRICTS AND SULFUR CONTENT

SCENARIO 5

COAL PRODUCTION
(Millions of tons per year(MMTPY)

BOM Districts*	High Sulfur (1.8%)		Low Sulfur (1.8%)		Total
	Underground	Surface	Underground	Surface	
1 & 3	45.656	41.641	28.341	25.848	141.486
7 & 8	0	0	190.880	56.695	247.575
2,4,6,9,10,11	173.600	184.339	0	0	357.939
TOTAL	219.256	225.980	219.221	82.543	747.000

NUMBER OF NEW MINES
(1.5 MMTPY Capacity)

BOM Districts*	High Sulfur (1.8%)		Low Sulfur (1.8%)		Total
	Underground	Surface	Underground	Surface	
1 & 3	14	13	13	8	48
7 & 8	0	0	51	16	67
2,4,6,9,10,11	47	50	0	0	97
TOTAL	61	63	64	24	212

COAL CONSUMPTION
(MMTPY from Demand Model)

Sector	High Sulfur	Low Sulfur	Total
Coal Mining	1.9	1.8	3.7
Fossil Elec. Util.	191.4	37.4	228.8
Ore Reduction	0	37.7	37.7
Chemical Feedstock	2.6	0	2.6
Misc. Thermal Uses	0	57.1	57.1
SUBTOTAL	195.9	134.0	329.9
Export	162.0	255.1	417.1
TOTAL	357.9	389.1	747.0

* Districts 1, 7 and 8 have been adjusted to include only those portions of the district located in the ORBES region.

TABLE A-12A. ORBES COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 BY BUREAU OF MINES (BOM) DISTRICTS AND TYPE OF MINE

SCENARIO 1

State and BOM		Coal Production (MMTPY)			Number of New Mines	
District No.	Total	Underground	Surface	Total	Underground	Surface
PA 1	91.927	51.816	40.111	31	17	14
WV 1	3.808	3.559	0.249	1	1	0
PA 2	55.359	28.685	26.674	17	9	8
WV 3	61.585	26.903	34.682	21	9	12
OH 4	82.538	32.933	49.605	25	10	15
WV 6	13.343	13.343	0	4	4	0
WV 7	31.963	25.963	6.000	10	8	2
WV 8	85.000	76.000	9.000	26	23	3
KY 8	158.319	110.279	48.040	49	34	15
KY 9	83.615	35.471	48.144	26	11	15
IL 10	103.193	54.097	49.096	32	17	15
IN 11	59.950	28.500	31.450	19	9	10
TOTAL*	830.600	487.549	343.051	261	152	109

---

* Data may not add to totals due to independent rounding

Preceding page blank

TABLE A-12B. ORBES COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 BY BUREAU OF MINES (BOM) DISTRICTS AND TYPE OF MINE

SCENARIO 2

State and BOM District No.		Coal Production (MMTPY)			Number of New Mines		
		Total	Underground	Surface	Total	Underground	Surface
PA	1	90.256	50.874	39.382	30	17	13
WV	1	3.739	3.494	0.244	1	1	0
PA	2	54.353	28.164	26.189	17	9	8
WV	3	60.465	26.414	34.051	20	9	11
OH	4	81.037	32.334	48.703	25	10	15
WV	6	13.100	13.100	0	4	4	0
WV	7	31.382	25.491	5.891	10	8	2
WV	8	83.455	74.618	8.836	25	22	3
KY	8	155.441	108.274	47.167	46	32	14
KY	9	82.095	34.826	47.269	25	11	14
IL	10	101.317	53.114	48.203	31	16	15
IN	11	58.860	27.982	30.878	17	8	9
TOTAL*		815.500	478.686	336.814	251	147	104

* Data may not add to totals due to independent rounding

TABLE A-12C. ORBES COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 BY BUREAU OF MINES (BOM) DISTRICTS AND TYPE OF MINE

SCENARIO 2a

State and BOM District No.	Coal Production (MMTPY)			Number of New Mines		
	Total	Underground	Surface	Total	Underground	Surface
PA 1	99.221	55.927	43.293	36	20	16
WV 1	4.110	3.841	0.269	1	1	0
PA 2	59.751	30.961	28.790	20	10	10
WV 3	66.471	29.037	37.434	25	11	14
OH 4	89.087	35.546	53.541	30	12	18
WV 6	14.402	14.402	0	5	5	0
WV 7	34.499	28.023	6.476	11	9	2
WV 8	91.744	82.030	9.714	30	27	3
KY 8	170.880	119.029	51.852	57	40	17
KY 9	90.249	38.285	51.964	30	13	17
IL 10	111.380	58.389	52.991	38	20	18
IN 11	64.706	30.761	33.945	21	10	11
TOTAL*	896.500	526.231	370.269	304	178	126

---

* Data may not add to totals due to independent rounding.

TABLE A-12D. ORBES COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 BY BUREAU OF MINES (BOM) DISTRICTS AND TYPE OF MINE

SCENARIO 2b

State and BOM District No.		Coal Production (MMTPY)			Number of New Mines		
		Total	Underground	Surface	Total	Underground	Surface
PA	1	90.477	50.999	39.478	30	17	13
WV	1	3.748	3.503	0.245	1	1	0
PA	2	54.486	28.233	26.253	17	9	8
WV	3	60.614	26.479	34.135	20	9	11
OH	4	81.236	32.414	48.823	25	10	15
WV	6	13.133	13.133	0	4	4	0
WV	7	31.459	25.554	5.905	10	8	2
WV	8	83.659	74.801	8.858	25	22	3
KY	8	155.822	108.540	47.282	46	32	14
KY	9	82.296	34.912	47.385	25	11	14
IL	10	101.565	53.244	48.322	31	16	15
IN	11	59.004	28.051	30.954	18	9	9
TOTAL*		817.500	479.860	337.641	252	148	104

* Data may not add to totals due to independent rounding.

TABLE A-12E. ORBES COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 BY BUREAU OF MINES (BOM) DISTRICTS AND TYPE OF MINE

SCENARIO 3

State and BOM District No.		Coal Production (MMTPY)			Number of New Mines		
		Total	Underground	Surface	Total	Underground	Surface
PA	1	77.473	43.669	33.804	21	12	9
WV	1	3.209	2.999	0.210	1	1	0
PA	2	46.655	24.175	22.480	11	6	5
WV	3	51.902	22.673	29.229	14	6	8
OH	4	69.560	27.755	41.805	17	7	10
WV	6	11.245	11.245	0	3	3	0
WV	7	26.937	21.881	5.057	6	5	1
WV	8	71.635	64.050	7.585	17	15	2
KY	8	133.426	92.939	40.486	32	22	10
KY	9	70.468	29.894	40.574	17	7	10
IL	10	86.967	45.591	41.376	21	11	10
IN	11	50.524	24.019	26.505	12	6	6
TOTAL*		700.000	410.889	289.111	172	101	71

---

* Data may not add to totals due to independent rounding.

TABLE A-12F. ORBES COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 BY BUREAU OF MINES (BOM) DISTRICTS AND TYPE OF MINE

SCENARIO 4

State and BOM District No.		Coal Production (MMTPY)			Number of New Mines		
		Total	Underground	Surface	Total	Underground	Surface
PA	1	59.045	33.282	25.764	9	5	4
WV	1	2.446	2.286	0.160	0	0	0
PA	2	35.557	18.425	17.133	4	2	2
WV	3	39.556	17.280	22.276	7	3	4
OH	4	53.015	21.153	31.862	5	2	3
WV	6	8.570	8.570	0	1	1	0
WV	7	20.530	16.676	3.854	2	2	0
WV	8	54.596	48.815	5.781	6	5	1
KY	8	101.689	70.833	30.856	11	8	3
KY	9	53.706	22.783	30.923	5	2	3
IL	10	66.282	34.747	31.535	7	4	3
IN	11	38.506	18.306	20.201	4	2	2
TOTAL*		533.500	313.156	220.344	61	36	25

* Data may not add to totals due to independent rounding.

TABLE A-12G. ORBES COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 BY BUREAU OF MINES (BOM) DISTRICTS AND TYPE OF MINE

SCENARIO 5

State and BOM District No.		Coal Production (MMTPY)			Number of New Mines		
		Total	Underground	Surface	Total	Underground	Surface
PA	1	82.675	46.601	36.074	25	14	11
WV	1	3.425	3.201	0.224	1	1	0
PA	2	49.787	25.798	23.989	13	7	6
WV	3	55.386	24.195	31.191	16	7	9
OH	4	74.231	29.618	44.612	20	8	12
WV	6	12.000	12.000	0	3	3	0
WV	7	28.746	23.350	5.396	7	6	1
WV	8	76.445	68.351	8.094	20	18	2
KY	8	142.384	99.179	43.205	38	26	12
KY	9	75.199	31.901	43.298	21	9	12
IL	10	92.807	48.652	44.154	25	13	12
IN	11	53.916	25.631	28.285	15	7	8
TOTAL*		747.000	438.477	308.523	204	119	85

---

* Data may not add to totals due to independent rounding.

TABLE A-13A. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 1: ILLINOIS

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
10	Christian	6.177	0	6.177	0.67	0	0	0	0.67
10	Douglas	3.142	0	3.142	1.00	0	0	0	1.00
10	Franklin	8.026	0	8.026	0	0	0	0	0
10	Fulton	0	4.237	4.237	0	0	0	1.00	1.00
10	Gallatin	3.000	0.464	3.464	2.00	0	0	0	2.00
10	Jackson	0	1.000	1.000	0	0.67	0	0	0.67
10	Jefferson	9.070	1.009	10.079	2.00	0	0	0	2.00
10	Johnson	0	0.008	0.008	0	0	0	0	0
10	Kankakee	0	0.242	0.242	0	0	0	0	0
10	Knox	0	1.722	1.722	0	1.00	0	0	1.00
10	Macoupin	3.707	0	3.707	2.00	0	0	0	2.00
10	Montgomery	2.452	0	2.452	1.00	0	0	0	1.00
10	Peoria	0	1.943	1.943	0	0	0	0.33	0.33
10	Perry	3.000	18.868	21.868	2.00	0	0	4.33	6.33
10	Randolph	2.350	11.012	13.362	0	2.00	0	2.00	4.00
10	St. Clair	4.120	0.929	5.049	0	0	0	0	0
10	Saline	3.000	2.018	5.018	2.00	0	0	0.33	2.33
10	Stark	0	3.000	3.000	0	2.00	0	0	2.00
10	Vermilion	0.007	0	0.007	0	0	0	0	0
10	Wabash	3.500	0	3.500	2.33	0	0	0	2.33
10	Williamson	2.544	2.644	5.188	1.67	0	0	0.33	2.00
	TOTAL*	54.097	49.096	103.193	16.67	5.67	0	8.33	30.67

* Data may not add to total due to independent rounding.

Preceding page blank

TABLE A-13B. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 1: INDIANA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
11	Clay	0	1.500	1.500	0	1.00	0	0	1.00
11	Daviess	1.500	1.500	3.000	1.00	1.00	0	0	2.00
11	Fountain	0	0.500	0.500	0	0.33	0	0	0.33
11	Gibson	6.000	0	6.000	4.00	0	0	0	4.00
11	Greene	1.500	1.001	2.501	1.00	0	0	0	1.00
11	Knox	1.500	1.500	3.000	1.00	1.00	0	0	2.00
11	Owen	0	0.037	0.037	0	0	0	0	0
11	Parke	0	0.002	0.002	0	0	0	0	0
11	Pike	4.856	6.107	10.963	3.00	1.00	0	0.33	4.33
11	Spencer	0	0.683	0.683	0	0	0	0	0
11	Sullivan	6.000	3.885	9.885	4.00	1.67	0	0	5.67
11	Vermillion	1.500	3.451	4.951	1.00	0	0	0.33	1.33
11	Vigo	4.144	0	4.144	2.00	0	0	0	2.00
11	Warrick	1.500	11.282	12.782	1.00	2.00	0	1.00	4.00
	TOTAL*	28.500	31.451	59.951	18.00	8.00	0	1.67	27.67

* Data may not add to total due to independent rounding.

TABLE A-13C. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 1: EAST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
8	Bell	3.500	3.240	6.740	2.33	2.00	0	0	4.33
8	Boyd	0	0.188	0.188	0	0	0	0	0
8	Breathitt	0.147	8.000	8.147	0	5.33	0	0	5.33
8	Carter	0.005	0.537	0.542	0	0	0	0	0
8	Clay	0.844	0.500	1.344	0	0.33	0	0	0.33
8	Elliott	0	0.670	0.670	0	0	0	0	0
8	Floyd	7.795	2.567	10.362	1.00	0	1.00	0	2.00
8	Greenup	0	0.174	0.174	0	0	0	0	0
8	Harlan	21.937	2.026	23.963	1.00	0	4.00	0	5.00
8	Jackson	0	0.052	0.052	0	0	0	0	0
8	Johnson	0.374	1.151	1.525	0	0.67	0	0	0.67
8	Knott	8.845	1.252	10.097	1.00	0	1.33	0	2.33
8	Knox	0.080	1.440	1.520	0	0	0	0	0
8	Laurel	0.203	0.932	1.135	0	0	0	0	0
8	Lawrence	0.032	1.141	1.173	0	0	0	0	0
8	Lee	0.064	0.228	0.292	0	0	0	0	0
8	Leslie	4.453	3.000	7.453	0.67	2.00	1.00	0	3.67
8	Letcher	9.572	1.892	11.464	3.00	0.33	1.00	0	4.33
8	McCreary	1.867	0.168	2.035	0	0	0.33	0	0.33
8	Magoffin	1.000	1.234	2.234	0.67	0.33	0	0	1.00
8	Martin	6.286	4.209	10.495	1.00	1.00	1.00	0	3.00
8	Morgan	0	0.659	0.659	0	0	0	0	0
8	Owsley	0	0.309	0.309	0	0	0	0	0
8	Perry	5.805	3.177	8.982	1.00	1.33	1.00	0	3.33
8	Pike	36.531	7.389	43.920	5.00	0.33	6.00	0.33	11.67
8	Pulaski	0.342	0.318	0.660	0	0	0	0	0
8	Rockcastle	0.005	0.033	0.038	0	0	0	0	0
8	Wayne	0.016	0.040	0.056	0	0	0	0	0
8	Whitley	0.574	1.501	2.075	0	0	0	0	0
8	Wolfe	0	0.014	0.014	0	0	0	0	0
	TOTAL*	110.279	48.040	158.319	16.67	13.67	16.67	0.33	47.33

* Data may not add to total due to independent rounding.

TABLE A-13D. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 1: WEST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
9	Butler	3.000	0.338	3.338	2.00	0	0	0	2.00
9	Christian	0	0.344	0.344	0	0	0	0	0
9	Daviess	0	2.000	2.000	0	1.33	0	0	1.33
9	Edmonson	0	0.018	0.018	0	0	0	0	0
9	Hancock	0	0.069	0.069	0	0	0	0	0
9	Henderson	6.000	0	6.000	4.00	0	0	0	0
9	Hopkins	4.897	6.878	11.775	2.00	1.67	0	0	4.00
9	McLean	3.000	1.421	4.421	2.00	0	0	1.00	4.67
9	Muhlenberg	3.993	27.542	31.535	0	2.00	0	0	2.00
9	Ohio	2.582	8.021	10.603	1.00	1.67	0	5.00	7.00
9	Union	6.000	1.500	7.500	4.00	1.00	0	1.00	3.67
9	Webster	6.00	0.013	6.013	4.00	0	0	0	5.00
							0	0	4.00
	TOTAL*	35.471	48.144	83.615	19.00	7.67	0	7.00	33.67

* Data may not add to total due to independent rounding.

TABLE A-13E. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 1: OHIO

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
4	Athens	4.500	0.500	5.000	3.00	0.33	0	0	3.33
4	Belmont	8.337	14.532	22.869	3.00	1.00	0	2.00	6.00
4	Carroll	0	0.321	0.321	0	0	0	0	0
4	Columbiana	0.066	1.500	1.566	0	1.00	0	0	1.00
4	Coshocton	1.011	3.000	4.011	0	2.00	0	0	2.00
4	Gallia	0	0.163	0.163	0	0	0	0	0
4	Guernsey	1.500	1.280	2.780	1.00	0	0	0	1.00
4	Harrison	4.500	4.008	8.588	3.00	1.00	0	0.33	4.33
4	Hocking	0	0.450	0.450	0	0	0	0	0
4	Holmes	0	1.034	1.034	0	0	0	0	0
4	Jackson	0.086	0.602	0.688	0	0	0	0	0
4	Jefferson	3.000	6.451	9.451	2.00	0	0	1.00	3.00
4	Lawrence	0	0.136	0.136	0	0	0	0	0
4	Mahoning	0	0.713	0.713	0	0	0	0	0
4	Meigs	3.000	0	3.000	2.00	0	0	0	2.00
4	Monroe	1.129	0	1.129	0	0	0	0	0
4	Morgan	0	0.786	0.786	0	0	0	0	0
4	Muskingum	1.500	6.559	8.059	1.00	1.00	0	1.00	3.00
4	Noble	0	1.154	1.154	0	0	0	0	0
4	Perry	2.696	1.500	4.196	1.00	1.00	0	0	2.00
4	Stark	0	0.635	0.635	0	0	0	0	0
4	Tuscarawas	1.500	2.500	4.000	1.00	1.67	0	0	2.67
4	Vinton	0.107	1.713	1.820	0	0	0	0	0
4	Wayne	0	0.068	0.068	0	0	0	0	0
	TOTAL*	32.933	49.605	82.538	17.00	9.00	0	4.33	30.33

* Data may not add to total due to independent rounding.

TABLE A-13F. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 1: PENNSYLVANIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
2	Allegheny	3.862	1.257	5.119	0	0	0.33	0	0.33
1 & 2	Armstrong	8.753	4.969	13.722	3.00	2.00	1.00	0.33	6.33
2	Beaver	0.219	0.500	0.719	0	0.33	0	0	0.33
1	Bedford	0	0.079	0.079	0	0	0	0	0
2	Butler	0.124	4.088	4.212	0	2.00	0	0	2.00
1	Cambria	14.338	3.111	17.449	0.33	0	2.00	1.00	3.33
1	Clarion	3.000	7.739	10.739	2.00	0	0	2.00	4.00
1	Clearfield	2.007	10.683	12.683	1.00	2.33	0	2.00	5.33
1	Elk	0	1.306	1.306	0	0	0	0.33	0.33
1 & 2	Fayette	0.865	5.628	6.493	0	0	0	1.33	1.33
2	Greene	8.976	2.258	11.234	4.00	0	0	0.33	4.33
1 & 2	Indiana	17.625	3.225	20.850	1.00	0	2.33	1.00	4.33
1	Jefferson	3.000	2.488	5.488	2.00	0	0	1.00	3.00
2	Lawrence	0	1.445	1.445	0	0	0	0.33	0.33
2	Mercer	0	0.875	0.875	0	0	0	0	0
1	Somerset	3.373	6.278	9.651	2.00	0.33	0	1.33	3.67
2	Venango	0	1.383	1.383	0	0	0	0.33	0.33
2	Washington	13.087	5.943	19.030	3.00	0	1.00	1.33	5.33
1 & 2	Westmoreland	1.272	3.532	4.804	0	0	0	1.00	1.00
	TOTAL*	80.501	66.785	147.286	18.33	7.00	6.67	13.67	45.67

* Data may not add to total due to independent rounding.

TABLE A-13G. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 1: WEST VIRGINIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
3	Barbour	3.000	8.265	11.265	2.00	0	0	3.00	5.00
8	Boone	15.600	0.877	16.477	1.67	0.33	0.33	0	2.33
3	Braxton	0.011	0	0.011	0	0	0	0	0
6	Brooke	1.130	0	1.130	0	0	0	0	0
8	Clay	0.116	0.011	0.127	0	0	0	0	0
7 & 8	Fayette	4.351	0.728	5.079	1.33	0	1.00	0	2.33
1	Grant	3.559	0.123	3.682	0	0	1.00	0	1.00
7	Greenbriar	0.389	3.410	3.799	0	0	0	1.00	1.00
3	Gilmer	0.001	0.217	0.218	0	0	0	0	0
3	Harrison	3.223	2.890	6.113	1.00	0	0	1.00	2.00
8	Kanawha	10.676	4.500	15.176	2.33	3.00	0	0	5.33
3	Lewis	0.001	1.962	1.963	0	0	0	1.00	1.00
8	Lincoln	0.010	0	0.010	0	0	0	0	0
8	Logan	14.136	0.510	14.646	3.33	0	0.33	0	3.67
7 & 8	McDowell	18.901	0.790	19.691	3.00	0	2.33	0	5.33
3	Marion	4.704	0	4.704	2.00	0	0	0	2.00
6	Marshall	9.250	0	9.250	2.00	0	1.00	0	3.00
8	Mason	0.297	0	0.297	0	0	0	0	0
7	Mercer	1.792	0.503	2.295	0	0	0.33	0	0.33
8	Mingo	7.500	1.500	9.000	5.00	1.00	0	0	6.00
3	Monongalia	10.063	3.580	13.643	0	0	1.00	1.00	2.00
3 & 8	Nicholas	6.324	3.188	9.512	1.00	0	0	1.00	2.00
6	Ohio	2.963	0	2.963	0	0	0.33	0	0.33
3	Preston	0.869	6.860	7.729	0	0	0	2.33	2.33
7 & 8	Raleigh	9.106	0.550	9.656	2.33	0	2.00	0	4.33
3	Randolph	0.190	2.893	3.083	0	0	0	1.00	1.00
7	Summers	0.092	0	0.092	0	0	0	0	0
3	Taylor	1.500	0.320	1.820	1.00	0	0	0	1.00
1	Tucker	0	0.126	0.126	0	0	0	0	0
3	Upshur	0.607	4.031	4.638	0	0	0	1.33	1.33
8	Wayne	0.914	0.500	1.414	0	0.33	0	0	0.33
3	Webster	0.103	0.764	0.867	0	0	0	0	0
7 & 8	Wyoming	14.387	0.833	15.220	2.00	0	2.00	0	4.00
	TOTAL*	145.768	49.931	195.699	30.00	4.66	11.67	12.67	59.00

* Data may not add to total due to independent rounding.

TABLE A-14A. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BYTYPE OF MINE

SCENARIO 2: ILLINOIS

BOM Dist. No.	County	Coal Production (MMTPY) Un'grd	Surface	Total	Number of New Mines(1.5 MMTPY) Assigned Un'grd	Surface	Allocated Un'grd	Surface	Total
10	Christian	6.156	0	6.156	0.67	0	0.33	0	1.00
10	Douglas	3.132	0	3.132	1.00	0	0	0	1.00
10	Franklin	7.999	0	7.999	2.00	0	0.33	0	2.33
10	Fulton	0	4.153	4.153	0	2.00	0	0	2.00
10	Gallatin	2.157	0.455	2.612	0	0	0	0	0
10	Jackson	0	1.000	1.000	0	0.67	0	0	0.67
10	Jefferson	9.039	0.989	10.028	0	0	0.33	0	0.33
10	Johnson	0	0.008	0.008	0	0	0	0	0
10	Kankakee	0	0.237	0.237	0	0	0	0	0
10	Knox	0	1.687	1.687	0	1.00	0	0	1.00
10	Macoupin	3.695	0	3.695	2.00	0	0	0	2.00
10	Montgomery	2.443	0	2.443	1.00	0	0	0	1.00
10	Peoria	0	1.905	1.905	0	1.00	0	0	1.00
10	Perry	3.000	18.494	21.494	2.00	0	0	3.00	5.00
10	Randolph	2.342	10.794	13.136	0	2.00	0	1.33	3.33
10	St. Clair	4.106	0.911	5.107	0	0	0	0	0
10	Saline	3.000	1.978	4.978	2.00	0	0	0.33	2.33
10	Stark	0	3.000	3.000	0	2.00	0	0	2.00
10	Vermilion	0.007	0	0.007	0	0	0	0	0
10	Wabash	3.500	0	3.500	2.33	0	0	0	2.33
10	Williamson	2.536	2.592	5.128	0.67	0	0	0.33	1.00
	TOTAL*	53.114	48.203	101.317	13.67	8.67	1.00	5.00	28.33

* Data may not add to total due to independent rounding.

Preceding page blank

TABLE A-14B. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2: INDIANA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
11	Clay	0	1.500	1.500	0	1.00	0	0	1.00
11	Daviess	1.500	1.500	3.000	1.00	1.00	0	0	2.00
11	Fountain	0	0.500	0.500	0	0.33	0	0	0.33
11	Gibson	6.000	0	6.000	4.00	0	0	0	4.00
11	Greene	1.500	0.980	2.480	1.00	0	0	0	1.00
11	Knox	1.500	1.500	3.000	1.00	1.00	0	0	2.00
11	Owen	0	0.036	0.036	0	0	0	0	0
11	Parke	0	0.002	0.002	0	0	0	0	0
11	Pike	4.577	5.975	10.552	3.00	1.00	0	0	4.00
11	Spencer	0	0.669	0.669	0	0	0	0	0
11	Sullivan	6.000	3.801	9.801	4.00	1.67	0	0	5.67
11	Vermillion	1.500	3.377	4.877	1.00	0	0	0	1.00
11	Vigo	3.905	0	3.905	2.00	0	0	0	2.00
11	Warrick	1.500	11.038	12.538	1.00	2.00	0	0.33	3.33
	TOTAL*	27.982	30.878	58.860	18.00	8.00	0	0.33	26.33

* Data may not add to total due to independent rounding.

TABLE A-14C. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2: EAST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
8	Bell	3.500	3.296	6.796	2.33	2.00	0	0	4.33
8	Boyd	0	0.192	0.192	0	0	0	0	0
8	Breathitt	0.146	8.000	8.146	0	5.33	0	0	5.33
8	Carter	0.005	0.546	0.551	0	0	0	0	0
8	Clay	0.836	0.500	1.336	0	0.33	0	0	0.33
8	Elliott	0	0.682	0.682	0	0	0	0	0
8	Floyd	7.721	2.611	10.332	1.00	0	1.00	0	2.00
8	Greenup	0	0.177	0.177	0	0	0	0	0
8	Harlan	21.729	2.061	23.790	1.00	0	4.00	0	5.00
8	Jackson	0	0.053	0.053	0	0	0	0	0
8	Johnson	0.370	1.171	1.541	0	0.67	0	0	0.67
8	Knott	8.761	1.273	10.034	1.00	0	1.33	0	2.33
8	Knox	0.079	1.465	1.544	0	0	0	0	0
8	Laurel	0.201	0.948	1.149	0	0	0	0	0
8	Lawrence	0.032	1.161	1.193	0	0	0	0	0
8	Lee	0.064	0.232	0.296	0	0	0	0	0
8	Leslie	4.411	1.500	5.911	0.33	1.00	1.00	0	2.33
8	Letcher	9.481	1.924	11.405	3.00	0.33	1.00	0	4.33
8	McCreary	1.850	0.171	2.021	0	0	0.33	0	0.33
8	Magoffin	0	1.255	1.255	0	0.33	0	0	0.33
8	Martin	6.226	4.281	10.507	1.00	1.00	1.00	0	3.00
8	Morgan	0	0.670	0.670	0	0	0	0	0
8	Owsley	0	0.315	0.315	0	0	0	0	0
8	Perry	5.750	3.231	8.981	1.00	1.33	1.00	0	3.33
8	Pike	36.184	7.516	43.700	5.00	0.33	5.33	0	10.67
8	Pulaski	0.339	0.324	0.663	0	0	0	0	0
8	Rockcastle	0.005	0.034	0.039	0	0	0	0	0
8	Wayne	0.016	0.041	0.057	0	0	0	0	0
8	Whitley	0.569	1.526	2.096	0	0	0	0	0
8	Wolfe	0	0.014	0.014	0	0	0	0	0
	TOTAL*	108.274	47.167	155.441	15.67	12.67	16.00	0	44.33

* Data may not add to total due to independent rounding.

TABLE A-14D. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2: WEST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
9	Butler	3.000	0.331	3.331	2.00	0	0	0	2.00
9	Christian	0	0.338	0.338	0	0	0	0	0
9	Daviess	0	2.000	2.000	0	1.33	0	0	1.33
9	Edmonson	0	0.017	0.017	0	0	0	0	0
9	Hancock	0	0.068	0.068	0	0	0	0	0
9	Henderson	6.000	0	6.000	4.00	0	0	0	4.00
9	Hopkins	3.981	6.744	10.725	2.00	1.67	0	1.00	4.67
9	McLean	4.500	1.393	5.893	3.00	0	0	0	3.00
9	Muhlenberg	3.246	27.003	30.249	1.00	2.00	0	4.00	7.00
9	Ohio	2.099	7.863	9.962	1.00	1.67	0	1.00	3.67
9	Union	6.000	1.500	7.500	4.00	1.00	0	0	5.00
9	Webster	6.000	0.013	6.013	4.00	0	0	0	4.00
	TOTAL*	34.826	47.269	82.095	21.00	7.67	0	6.00	34.67

* Data may not add to total due to independent rounding.

TABLE A-14E. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2: OHIO

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
4	Athens	6.000	2.000	8.000	4.00	1.33	0	0	5.33
4	Belmont	8.827	13.824	22.651	3.00	1.00	0	2.00	6.00
4	Carroll	0	0.305	0.305	0	0	0	0	0
4	Columbiana	0.070	1.500	1.570	0	1.00	0	0	1.00
4	Coshocton	1.071	3.000	4.071	0	2.00	0	0	2.00
4	Gallia	0	0.155	0.155	0	0	0	0	0
4	Guernsey	0	1.217	1.217	0	0	0	0	0
4	Harrison	4.308	3.813	8.121	2.00	0	0	0.33	2.33
4	Hocking	0	0.428	0.428	0	0	0	0	0
4	Holmes	0	0.984	0.984	0	0	0	0	0
4	Jackson	0.091	0.573	0.664	0	0	0	0	0
4	Jefferson	3.000	6.137	9.137	2.00	0	0	1.00	3.00
4	Lawrence	0	0.129	0.129	0	0	0	0	0
4	Mahoning	0	0.678	0.678	0	0	0	0	0
4	Meigs	3.000	0	3.000	2.00	0	0	0	2.00
4	Monroe	1.500	0	1.500	1.00	0	0	0	1.00
4	Morgan	0	0.747	0.747	0	0	0	0	0
4	Muskingum	1.500	6.239	7.739	1.00	1.00	0	1.00	3.00
4	Noble	0	1.098	1.098	0	0	0	0	0
4	Perry	2.854	1.500	4.354	0	1.00	0	0	1.00
4	Stark	0	0.604	0.604	0	0	0	0	0
4	Tuscarawas	0	2.076	2.076	0	0.67	0	0	0.67
4	Vinton	0.113	1.630	1.743	0	1.00	0	0	1.00
4	Wayne	0	0.065	0.065	0	0	0	0	0
	TOTAL*	32.334	48.703	81.037	15.00	9.00	0	4.33	28.33

* Data may not add to total due to independent rounding.

TABLE A-14F. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2: PENNSYLVANIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
2	Allegheny	3.461	1.234	4.695	0	0	0	0	0
1 & 2	Armstrong	8.857	4.879	13.736	1.00	2.00	2.00	0.33	5.33
2	Beaver	0.196	0.500	0.696	0	0.33	0	0	0.33
1	Bedford	0	0.078	0.078	0	0	0	0	0
2	Butler	0.111	4.012	4.123	0	2.00	0	0	2.00
1	Cambria	14.512	3.055	17.567	0.33	0	3.67	1.00	5.00
1	Clarion	3.000	7.598	10.598	2.00	0	0	2.00	4.00
1	Clearfield	2.032	10.489	12.521	0	2.33	0.33	2.00	4.67
1	Elk	0	1.282	1.282	0	0	0	0	0
1 & 2	Fayette	0.778	5.523	6.301	0	0	0	1.33	1.33
2	Greene	9.000	2.216	11.216	6.00	0	0	0.33	6.33
1 & 2	Indiana	17.800	3.166	20.966	1.00	0	4.00	1.00	6.00
1	Jefferson	1.500	2.443	3.943	1.00	0	0	0.33	1.33
2	Lawrence	0	1.418	1.418	0	0	0	0.33	0.33
2	Mercer	1.500	0.858	2.358	1.00	0	0	0	1.00
1	Somerset	3.414	6.164	9.578	1.00	0.33	0.33	1.33	3.00
2	Venango	0	1.358	1.358	0	0	0	0.33	0.33
2	Washington	11.729	5.833	17.562	5.00	0	0	1.33	6.33
1 & 2	Westmoreland	1.148	3.466	4.614	0	0	0	1.00	1.00
	TOTAL*	79.038	65.571	144.608	18.33	7.00	10.33	12.67	48.33

* Data may not add to total due to independent rounding.

TABLE A-14G. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2: WEST VIRGINIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
3	Barbour	3.000	8.115	11.115	2.00	0	0	2.33	4.33
8	Boone	15.304	1.212	16.516	1.67	0.33	1.00	0	3.00
3	Braxton	0.011	0	0.011	0	0	0	0	0
6	Brooke	1.110	0	1.110	0	0	0	0	0
8	Clay	0.114	0.015	0.129	0	0	0	0	0
7 & 8	Fayette	4.122	0.808	1.930	0.33	0	1.00	0	1.33
1	Grant	3.494	0.120	3.614	0	0	1.00	0	1.00
7	Greenbriar	0.382	3.348	3.730	0	0	0	1.00	1.00
3	Gilmer	0.001	0.213	0.214	0	0	0	0	0
3	Harrison	3.083	2.837	5.920	1.00	0	0	1.00	2.00
8	Kanawha	10.474	4.500	14.974	2.33	3.00	0.33	0	5.67
3	Lewis	0.001	1.926	1.927	0	0	0	0.33	0.33
8	Lincoln	0.010	0	0.010	0	0	0	0	0
8	Logan	13.868	0.705	14.573	1.33	0	1.00	0	2.33
7 & 8	McDowell	18.549	0.835	19.384	3.00	0	2.67	0	5.67
3	Marion	4.499	0	4.499	2.00	0	0	0	2.00
6	Marshall	9.081	0	9.081	5.00	0	0	0	5.00
8	Mason	0.292	0	0.292	0	0	0	0	0
7	Mercer	1.759	0.494	2.253	0	0	0.33	0	0.33
8	Mingo	7.500	0.382	7.882	5.00	0	0	0	5.00
3	Monongalia	9.626	3.515	13.141	0	0	1.00	1.00	2.00
3 & 8	Nicholas	8.124	3.245	11.369	3.00	0	0	1.00	4.00
6	Ohio	2.909	0	2.909	0	0	0	0	0
3	Preston	0.831	6.736	7.567	0	0	0	2.00	2.00
7 & 8	Raleigh	9.004	0.659	9.663	2.33	0	2.00	0	4.33
3	Randolph	0.182	2.840	3.022	0	0	0	1.00	1.00
7	Summers	0.091	0	0.091	0	0	0	0	0
3	Taylor	0	0.314	0.314	0	0	0	0	0
1	Tucker	0	0.124	0.124	0	0	0	0	0
3	Upshur	0.581	3.957	4.538	0	0	0	1.00	1.00
8	Wayne	0.897	0.500	1.397	0	0.33	0	0	0.33
3	Webster	0.098	-.750	0.848	0	0	0	0	0
7 & 8	Wyoming	14.121	0.872	14.993	2.00	0	2.33	0	4.33
	TOTAL*	143.118	49.022	192.140	31.00	3.67	12.67	10.67	58.00

* Data may not add to total due to independent rounding.

TABLE A-15A. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2a: ILLINOIS

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
10	Christian	6.901	0	6.901	0.67	0	1.00	0	1.67
10	Douglas	3.511	0	3.511	1.00	0	0.33	0	1.33
10	Franklin	8.967	0	8.967	2.00	0	1.00	0	3.00
10	Fulton	0	4.603	4.603	0	2.00	0	0.33	2.33
10	Gallatin	2.418	0.504	2.922	0	0	0.33	0	0.33
10	Jackson	0	1.000	1.000	0	0.67	0	0	0.67
10	Jefferson	10.133	1.096	11.229	0	0	2.00	0	2.00
10	Johnson	0	0.009	0.009	0	0	0	0	0
10	Kankakee	0	0.263	0.263	0	0	0	0	0
10	Knox	0	1.870	1.870	0	1.00	0	0	1.00
10	Macoupin	4.142	0	4.142	2.00	0	0	0	2.00
10	Montgomery	2.739	0	2.739	1.00	0	0	0	1.00
10	Peoria	0	2.111	2.111	0	1.00	0	0	1.00
10	Perry	3.000	20.498	23.498	2.00	0	0	5.00	7.00
10	Randolph	2.626	11.963	14.588	0	2.00	0.33	2.00	4.33
10	St. Clair	4.603	1.010	5.613	0	0	1.00	0	1.00
10	Saline	3.000	2.192	5.192	2.00	0	0	0.33	2.33
10	Stark	0	3.000	3.000	0	2.00	0	0	2.00
10	Vermilion	0.008	0	0.008	0	0	0	0	0
10	Wabash	3.500	0	3.500	2.33	0	0	0	2.33
10	Williamson	2.843	2.873	5.716	0.67	0	0	1.00	1.67
	TOTAL*	58.389	52.991	111.380	13.67	8.67	6.00	8.67	37.00

* Data may not add to total due to independent rounding.

Preceding page blank

TABLE A-15B. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2a: INDIANA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
		Un'grd	Surface	Total	Assigned		Allocated		Total
					Un'grd	Surface	Un'grd	Surface	
11	Clay	0	1.500	1.500	0	1.00	0	0	1.00
11	Daviess	1.500	1.500	3.000	1.00	1.00	0	0	2.00
11	Fountain	0	0.500	0.500	0	0.33	0	0	0.33
11	Gibson	6.000	0	6.000	4.00	0	0	0	4.00
11	Greene	1.500	1.096	2.596	1.00	0	0	0	1.00
11	Knox	1.500	1.500	3.000	1.00	1.00	0	0	2.00
11	Owen	0	0.040	0.040	0	0	0	0	0
11	Parke	0	0.003	0.003	0	0	0	0	0
11	Pike	6.076	6.683	12.759	3.00	1.00	0	1.00	5.00
11	Spencer	0	0.748	0.748	0	0	0	0	0
11	Sullivan	6.000	4.252	10.252	4.00	1.67	0	0	5.67
11	Vermillion	1.500	3.777	5.277	1.00	0	0	0.33	1.33
11	Vigo	5.185	0	5.185	2.00	0	0	0	2.00
11	Warrick	1.500	12.347	13.847	1.00	2.00	0	1.00	4.00
	TOTAL*	30.761	33.945	64.706	18.00	8.00	0	2.33	28.33

* Data may not add to total due to independent rounding.

TABLE A-15C. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2a: EAST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
8	Bell	3.500	3.579	7.079	2.33	2.00	0	0	4.33
8	Boyd	0	0.208	0.208	0	0	0	0	0
8	Breathitt	0.159	8.000	8.159	0	5.33	0	0	5.33
8	Carter	0.006	0.593	0.599	0	0	0	0	0
8	Clay	0.914	0.500	1.414	0	0.33	0	0	0.33
8	Elliott	0	0.740	0.740	0	0	0	0	0
8	Floyd	8.440	2.835	11.275	1.00	0	2.00	0	3.00
8	Greenup	0	0.192	0.192	0	0	0	0	0
8	Harlan	23.752	2.238	25.990	1.00	0	5.33	0	6.33
8	Jackson	0	0.057	0.057	0	0	0	0	0
8	Johnson	0.405	1.272	1.677	0	0.67	0	0	0.67
8	Knott	9.577	1.383	10.960	1.00	0	2.00	0	3.00
8	Knox	0.087	1.591	1.678	0	0	0	0	0
8	Laurel	0.220	1.029	1.249	0	0	0	0	0
8	Lawrence	0.035	1.261	1.296	0	0	0	0	0
8	Lee	0.069	0.252	0.321	0	0	0	0	0
8	Leslie	4.822	3.000	7.822	0.67	2.00	1.00	0	3.67
8	Letcher	10.363	2.090	12.453	3.00	0.33	1.33	0	4.67
8	McCreary	2.022	0.185	2.207	0	0	0.33	0	0.33
8	Magoffin	1.000	1.363	2.363	0.67	0.33	0	0	1.00
8	Martin	6.806	4.649	11.455	1.00	1.00	1.00	0.33	3.33
8	Morgan	0	0.727	0.727	0	0	0	0	0
8	Owsley	0	0.342	0.342	0	0	0	0	0
8	Perry	6.285	3.509	9.794	1.00	1.33	1.00	0	3.33
8	Pike	39.553	8.162	47.715	5.00	0.33	8.00	1.00	14.33
8	Pulaski	0.370	0.351	0.721	0	0	0	0	0
8	Rockcastle	0.006	0.037	0.043	0	0	0	0	0
8	Wayne	0.017	0.044	0.061	0	0	0	0	0
8	Whitley	0.622	1.657	2.279	0	0	0	0	0
8	Wolfe	0	0.015	0.015	0	0	0	0	0
	TOTAL*	119.029	51.861	170.890	16.67	13.67	22.00	1.33	53.67

* Data may not add to total due to independent rounding.

TABLE A-15D. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2a: WEST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
9	Butler	3.000	0.367	3.367	2.00	0	0	0	2.00
9	Christian	0	0.374	0.374	0	0	0	0	0
9	Daviess	0	2.000	2.000	0	1.33	0	0	1.33
9	Edmonson	0	0.019	0.019	0	0	0	0	0
9	Hancock	0	0.075	0.075	0	0	0	0	0
9	Henderson	6.000	0	6.000	4.00	0	0	0	4.00
9	Hopkins	5.313	7.467	12.780	2.00	1.67	0	1.00	4.67
9	McLean	4.500	1.542	6.042	3.00	0	0	0.33	3.33
9	Muhlenberg	4.333	29.899	34.232	1.00	2.00	0	6.00	9.00
9	Ohio	2.801	8.707	11.508	1.00	1.67	0	1.33	4.00
9	Union	6.338	1.500	7.838	4.00	1.00	0	0	5.00
9	Webster	6.000	0.014	6.014	4.00	0	0	0	4.00
	TOTAL*	38.285	51.964	90.249	21.00	7.67	0	8.67	37.33

* Data may not add to total due to independent rounding.

TABLE A-15E. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2a: OHIO

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
4	Athens	6.000	2.000	8.000	4.00	1.33	0	0	5.33
4	Belmont	4.500	14.676	19.176	3.00	1.00	0	1.33	5.33
4	Carroll	0	1.500	1.500	0	1.00	0	0	1.00
4	Columbiana	3.000	1.500	4.500	2.00	1.00	0	0	3.00
4	Coshocton	0	3.000	3.000	0	2.00	0	0	2.00
4	Gallia	0	0.164	0.164	0	0	0	0	0
4	Guernsey	3.000	1.292	4.292	2.00	0	0	0	2.00
4	Harrison	4.500	4.048	8.548	3.00	1.00	0	0	4.00
4	Hocking	0	0.454	0.454	0	0	0	0	0
4	Holmes	0	1.044	1.044	0	0	0	0	0
4	Jackson	0	0.608	0.608	0	0	0	0	0
4	Jefferson	4.500	6.515	11.015	3.00	1.00	0	0.33	4.33
4	Lawrence	0	0.137	0.137	0	0	0	0	0
4	Mahoning	0	0.720	0.720	0	0	0	0	0
4	Meigs	4.500	0	4.500	3.00	0	0	0	3.00
4	Monroe	1.500	0	1.500	1.00	0	0	0	1.00
4	Morgan	0	0.793	0.793	0	0	0	0	0
4	Muskingum	1.500	6.624	8.124	1.00	1.00	0	0.33	2.33
4	Noble	0	1.165	1.165	0	0	0	0	0
4	Perry	1.500	1.500	3.000	1.00	1.00	0	0	2.00
4	Stark	0	1.500	1.500	0	1.00	0	0	1.00
4	Tuscarawas	3.000	2.500	5.500	2.00	1.67	0	0	3.67
4	Vinton	0	1.730	1.730	0	1.00	0	0	1.00
4	Wayne	0	0.069	0.069	0	0	0	0	0
	TOTAL*	37.500	53.541	91.041	25.00	14.00	0	2.00	41.00

* Data may not add to total due to independent rounding.

TABLE A-15F. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2a: PENNSYLVANIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
2	Allegheny	3.421	1.359	4.780	0	0	0	0.33	0.33
1 & 2	Armstrong	9.670	5.363	15.033	2.00	2.00	2.00	1.00	7.00
2	Beaver	0.194	0.500	0.694	0	0.33	0	0	0.33
1	Bedford	0	0.085	0.085	0	0	0	0	0
2	Butler	0.110	4.419	4.529	0	2.00	0	0.33	2.33
1	Cambria	15.849	3.358	19.207	0.33	0	4.00	1.00	5.33
1	Clarion	3.000	8.353	11.353	2.00	0	0	3.00	5.00
1	Clearfield	3.00	11.530	14.530	2.00	1.33	0	3.00	6.33
1	Elk	0	1.410	1.410	0	0	0	0.33	0.33
1 & 2	Fayette	0.772	6.082	6.854	0	0	0	2.00	2.00
2	Greene	12.000	2.440	14.440	8.00	0	0	1.00	9.00
1 & 2	Indiana	19.408	3.481	22.889	1.00	0	4.33	1.00	6.33
1	Jefferson	1.500	2.685	4.185	1.00	0	0	1.00	2.00
2	Lawrence	0	1.561	1.561	0	0	0	0.33	0.33
2	Mercer	1.500	0.945	2.445	1.00	0	0	0	1.00
1	Somerset	3.728	6.776	10.504	1.00	0.33	0.33	2.00	3.67
2	Venango	0	1.495	1.495	0	0	0	0.33	0.33
2	Washington	11.594	6.424	18.018	6.00	0	0	2.00	8.00
1 & 2	Westmoreland	1.143	3.816	4.959	0	0	0	1.00	1.00
	TOTAL*	86.888	72.084	158.972	24.33	6.00	10.67	19.67	60.67

* Data may not add to total due to independent rounding.

TABLE A-15G. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2a: WEST VIRGINIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
3	Barbour	3.000	8.921	11.921	2.00	0	0	3.33	5.33
8	Boone	17.086	1.489	18.575	1.67	0.33	1.33	0	3.33
3	Braxton	0.010	0	0.010	0	0	0	0	0
6	Brooke	1.220	0	1.220	0	0	0	0	0
8	Clay	0.127	0.019	0.146	0	0	0	0	0
7 & 8	Fayette	4.562	0.930	5.492	0.33	0	1.00	0	1.33
1	Grant	3.841	0.132	3.973	0	0	1.00	0	1.00
7	Greenbriar	0.420	3.680	4.100	0	0	0	1.00	1.00
3	Gilmer	0.001	0.234	0.235	0	0	0	0	0
3	Harrison	2.905	3.119	6.024	1.00	0	0	1.00	2.00
8	Kanawha	11.693	4.500	16.193	4.33	3.00	0.33	0	7.67
3	Lewis	0.001	2.118	2.119	0	0	0	1.00	1.00
8	Lincoln	0.011	0	0.011	0	0	0	0	0
8	Logan	15.482	0.866	16.348	3.33	0	1.00	0	4.33
7 & 8	McDowell	20.565	0.944	21.509	3.00	0	4.00	0	7.00
3	Marion	4.239	0	4.239	2.00	0	0	0	2.00
6	Marshall	9.984	0	9.984	6.00	0	0	0	6.00
8	Mason	0.326	0	0.326	0	0	0	0	0
7	Mercer	1.934	0.543	2.477	0	0	0.33	0	0.33
8	Mingo	7.500	0.469	7.969	5.00	0	0	0	5.00
3	Monongalia	9.069	3.864	12.933	2.00	0	0	1.33	3.33
3 & 8	Nicholas	10.046	3.619	13.665	4.00	0	0.33	1.00	5.33
6	Ohio	3.198	0	3.198	1.00	0	0	0	1.00
3	Preston	3.000	7.405	10.405	2.00	0	0	3.00	5.00
7 & 8	Raleigh	9.556	0.778	10.334	2.33	0	2.00	0	4.33
3	Randolph	0.171	3.123	3.294	0	0	0	1.00	1.00
7	Summers	0.100	0	0.100	0	0	0	0	0
3	Taylor	0	0.346	0.346	0	0	0	0	0
1	Tucker	0	0.137	0.137	0	0	0	0	0
3	Upshur	0.547	4.351	4.898	0	0	0	1.33	1.33
8	Wayne	1.001	0.500	1.501	0	0.33	0	0	0.33
3	Webster	0.093	0.825	0.918	0	0	0	0	0
7 & 8	Wyoming	15.644	0.982	16.626	2.00	0	2.67	0	4.67
	TOTAL*	157.332	53.894	211.226	42.00	3.67	14.00	14.00	73.67

* Data may not add to total due to independent rounding.

TABLE A-16A. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2b: ILLINOIS

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
10	Christian	6.175	0	6.175	0.67	0	0.33	0	1.00
10	Douglas	3.141	0	3.141	1.00	0	0	0	1.00
10	Franklin	8.023	0	8.023	2.00	0	0.33	0	2.33
10	Fulton	0	4.164	4.164	0	2.00	0	0	2.00
10	Gallatin	2.164	0.456	2.620	0	0	0	0	0
10	Jackson	0	1.000	1.000	0	0.67	0	0	0.67
10	Jefferson	9.066	0.992	10.088	0	0	0.33	0	0.33
10	Johnson	0	0.008	0.008	0	0	0	0	0
10	Kankakee	0	0.238	0.238	0	0	0	0	0
10	Knox	0	1.692	1.692	0	1.00	0	0	1.00
10	Macoupin	3.706	0	3.706	2.00	0	0	0	2.00
10	Montgomery	2.451	0	2.451	1.00	0	0	0	1.00
10	Peoria	0	1.910	1.910	0	1.00	0	0	1.00
10	Perry	3.000	18.544	21.544	2.00	0	0	3.00	5.00
10	Randolph	2.349	10.823	13.172	0	2.00	0	1.33	3.33
10	St. Clair	4.118	0.913	5.031	0	0	0	0	0
10	Saline	3.000	1.983	4.983	2.00	0	0	0.33	2.33
10	Stark	0	3.000	3.000	0	2.00	0	0	2.00
10	Vermilion	0.007	0	0.007	0	0	0	0	0
10	Wabash	3.500	0	3.500	2.33	0	0	0	2.33
10	Williamson	2.543	2.599	5.142	0.67	0	0	0.33	1.00
	TOTAL*	53.244	48.322	101.566	13.67	8.67	1.00	5.00	28.33

* Data may not add to total due to independent rounding.

Preceding page blank

TABLE A-16B. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2b: INDIANA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
11	Clay	0	1.500	1.500	0	1.00	0	0	1.00
11	Daviess	1.500	1.500	3.000	1.00	1.00	0	0	2.00
11	Fountain	0	0.500	0.500	0	0.33	0	0	0.33
11	Gibson	6.000	0	6.000	4.00	0	0	0	4.00
11	Greene	1.500	0.983	2.483	1.00	0	0	0	1.00
11	Knox	1.500	1.500	3.000	1.00	1.00	0	0	2.00
11	Owen	0	0.036	0.036	0	0	0	0	0
11	Parke	0	0.002	0.002	0	0	0	0	0
11	Pike	4.614	5.993	10.607	3.00	1.00	0	0	4.00
11	Spencer	0	0.671	0.671	0	0	0	0	0
11	Sullivan	6.000	3.812	9.812	4.00	1.67	0	0	5.67
11	Vermillion	1.500	3.387	4.887	1.00	0	0	0	1.00
11	Vigo	3.937	0	3.937	2.00	0	0	0	2.00
11	Warrick	1.500	11.071	12.571	1.00	2.00	0	0.33	3.33
	TOTAL*	28.051	30.954	59.005	18.00	8.00	0	0.33	26.33

* Data may not add to total due to independent rounding.

TABLE A-16C. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2b: EAST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY) Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
8	Bell	3.500	3.306	6.806	2.33	2.00	0	0	4.33
8	Boyd	0	0.192	0.192	0	0	0	0	0
8	Breathitt	0.146	8.000	8.146	0	5.33	0	0	5.33
8	Carter	0.005	0.547	0.552	0	0	0	0	0
8	Clay	0.838	0.500	1.338	0	0.33	0	0	0.33
8	Elliott	0	0.684	0.684	0	0	0	0	0
8	Floyd	7.741	2.619	10.360	1.00	0	1.00	0	2.00
8	Greenup	0	0.177	0.177	0	0	0	0	0
8	Harlan	21.784	2.068	23.852	1.00	0	4.00	0	5.00
8	Jackson	0	0.053	0.053	0	0	0	0	0
8	Johnson	0.371	1.175	1.546	0	0.67	0	0	0.67
8	Knott	8.783	1.277	10.060	1.00	0	1.33	0	2.33
8	Knox	0.080	1.469	1.549	0	0	0	0	0
8	Laurel	0.202	0.951	1.153	0	0	0	0	0
8	Lawrence	0.032	1.165	1.197	0	0	0	0	0
8	Lee	0.064	0.233	0.297	0	0	0	0	0
8	Leslie	4.422	1.500	5.922	0.33	1.00	1.00	0	2.33
8	Letcher	9.505	1.930	11.435	3.00	0.33	1.00	0	4.33
8	McCreary	1.854	0.171	2.025	0	0	0.33	0	0.33
8	Magoffin	0	1.259	1.259	0	0.33	0	0	0.33
8	Martin	6.242	4.294	10.536	1.00	1.00	1.00	0	3.00
8	Morgan	0	0.672	0.672	0	0	0	0	0
8	Owsley	0	0.316	0.316	0	0	0	0	0
8	Perry	5.764	3.241	9.005	1.00	1.33	1.00	0	3.33
8	Pike	36.276	7.539	43.815	5.00	0.33	5.33	0	10.67
8	Pulaski	0.340	0.325	0.665	0	0	0	0	0
8	Rockcastle	0.005	0.034	0.039	0	0	0	0	0
8	Wayne	0.016	0.041	0.057	0	0	0	0	0
8	Whitley	0.570	1.531	2.101	0	0	0	0	0
8	Wolfe	0	0.014	0.014	0	0	0	0	0
	TOTAL*	108.540	47.282	155.822	15.67	12.67	16.00	0	44.33

* Data may not add to total due to independent rounding.

TABLE A-16D. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2b: WEST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
9	Butler	3.000	0.332	3.332	2.00	0	0	0	2.00
9	Christian	0	0.339	0.339	0	0	0	0	0
9	Daviess	0	2.000	2.000	0	1.33	0	0	1.33
9	Edmonson	0	0.017	0.017	0	0	0	0	0
9	Hancock	0	0.068	0.068	0	0	0	0	0
9	Henderson	6.000	0	6.000	4.00	0	0	0	4.00
9	Hopkins	4.018	6.761	10.779	2.00	1.67	0	1.00	4.67
9	McLean	4.500	1.397	5.897	3.00	0	0	0	3.00
9	Muhlenberg	3.276	27.074	30.350	1.00	2.00	0	4.00	7.00
9	Ohio	2.118	7.884	10.002	1.00	1.67	0	1.00	3.67
9	Union	6.000	1.500	7.500	4.00	1.00	0	0	5.00
9	Webster	6.000	0.013	6.013	4.00	0	0	0	4.00
	TOTAL*	34.912	47.385	82.297	21.00	7.67	0	6.00	34.67

* Data may not add to total due to independent rounding.

TABLE A-16E. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2b: OHIO

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
4	Athens	6.000	2.000	8.000	4.00	1.33	0	0	5.33
4	Belmont	7.340	13.865	21.205	3.00	1.00	0	2.00	6.00
4	Carroll	0	0.306	0.306	0	0	0	0	0
4	Columbiana	0.058	1.500	1.558	0	1.00	0	0	1.00
4	Coshocton	0.890	3.000	3.890	0	2.00	0	0	2.00
4	Gallia	0	0.155	0.155	0	0	0	0	0
4	Guernsey	3.000	1.221	4.221	2.00	0	0	0	2.00
4	Harrison	3.582	3.824	7.406	2.00	0	0	0.33	2.33
4	Hocking	0	0.429	0.429	0	0	0	0	0
4	Holmes	0	0.987	0.987	0	0	0	0	0
4	Jackson	0.076	0.575	0.651	0	0	0	0	0
4	Jefferson	3.000	6.155	9.155	2.00	0	0	1.00	3.00
4	Lawrence	0	0.130	0.130	0	0	0	0	0
4	Mahoning	0	0.680	0.680	0	0	0	0	0
4	Meigs	3.000	0	3.000	2.00	0	0	0	2.00
4	Monroe	1.500	0	1.500	1.00	0	0	0	1.00
4	Morgan	0	0.750	0.750	0	0	0	0	0
4	Muskingum	1.500	6.258	7.758	1.00	1.00	0	1.00	3.00
4	Noble	0	1.101	1.101	0	0	0	0	0
4	Perry	2.373	1.500	3.873	0	1.00	0	0	1.00
4	Stark	0	0.606	0.606	0	0	0	0	0
4	Tuscarawas	0	2.082	2.082	0	0.67	0	0	0.67
4	Vinton	0.094	1.635	1.729	0	1.00	0	0	1.00
4	Wayne	0	0.065	0.065	0	0	0	0	0
	TOTAL*	32.414	48.823	81.237	17.00	9.00	0	4.33	30.33

* Data may not add to total due to independent rounding.

TABLE A-16F. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2b: PENNSYLVANIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
2	Allegheny	3.475	1.237	4.712	0	0	0	0	0
1 & 2	Armstrong	8.881	4.890	13.771	1.00	2.00	2.00	0.33	5.33
2	Beaver	0.197	0.500	0.697	0	0.33	0	0	0.33
1	Bedford	0	0.078	0.078	0	0	0	0	0
2	Butler	0.111	4.022	4.133	0	2.00	0	0	2.00
1	Cambria	14.551	3.062	17.613	0.33	0	3.33	1.00	4.67
1	Clarion	3.000	7.617	10.617	2.00	0	0	2.00	4.00
1	Clearfield	2.037	10.514	12.551	0	2.33	0.33	2.00	4.67
1	Elk	0	1.285	1.285	0	0	0	0	0
1 & 2	Fayette	0.780	5.537	6.317	0	0	0	1.33	1.33
2	Greene	9.000	2.221	11.221	6.00	0	0	0.33	6.33
1 & 2	Indiana	17.849	3.174	21.023	1.00	0	4.00	1.00	6.00
1	Jefferson	1.500	2.449	3.949	1.00	0	0	0.33	1.33
2	Lawrence	0	1.421	1.421	0	0	0	0.33	0.33
2	Mercer	1.500	0.861	2.361	1.00	0	0	0	1.00
1	Somerset	3.423	6.179	9.602	1.00	0.33	0.33	1.33	3.00
2	Venango	0	1.361	1.361	0	0	0	0.33	0.33
2	Washington	11.775	5.848	17.623	5.00	0	0	1.33	6.33
1 & 2	Westmoreland	1.152	3.475	4.627	0	0	0	1.00	1.00
	TOTAL*	79.231	65.732	144.963	18.33	7.00	10.00	12.67	48.00

* Data may not add to total due to independent rounding.

TABLE A-16G. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 2b: WEST VIRGINIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
3	Barbour	3.000	8.135	11.135	2.00	0	0	2.33	4.33
8	Boone	15.348	1.219	16.567	1.67	0.33	1.00	0	3.00
3	Braxton	0.011	0	0.011	0	0	0	0	0
6	Brooke	1.112	0	1.112	0	0	0	0	0
8	Clay	0.114	0.015	0.129	0	0	0	0	0
7 & 8	Fayette	4.133	0.811	4.944	0.33	0	1.00	0	1.33
1	Grant	3.503	0.121	3.624	0	0	1.00	0	1.00
7	Greenbriar	0.383	3.356	3.739	0	0	0	1.00	1.00
3	Gilmer	0.001	0.213	0.214	0	0	0	0	0
3	Harrison	3.094	2.844	5.938	1.00	0	0	1.00	2.00
8	Kanawha	10.504	4.500	15.004	2.33	3.00	0.33	0	5.67
3	Lewis	0.001	1.931	1.932	0	0	0	0.33	0.33
8	Lincoln	0.010	0	0.010	0	0	0	0	0
8	Logan	13.908	0.709	14.617	1.33	0	1.00	0	2.33
7 & 8	McDowell	18.599	0.838	19.437	3.00	0	2.67	0	5.67
3	Marion	4.515	0	4.515	2.00	0	0	0	2.00
6	Marshall	9.104	0	9.104	5.00	0	0	0	5.00
8	Mason	0.292	0	0.292	0	0	0	0	0
7	Mercer	1.764	0.495	2.259	0	0	0.33	0	0.33
8	Mingo	7.500	0.384	7.884	5.00	0	0	0	5.00
3	Monongalia	9.659	3.524	13.183	0	0	1.00	1.00	2.00
3 & 8	Nicholas	8.134	3.254	11.388	3.00	0	0	1.00	4.00
6	Ohio	2.917	0	2.917	0	0	0	0	0
3	Preston	0.834	6.752	7.586	0	0	0	2.00	2.00
7 & 8	Raleigh	9.017	0.662	9.679	2.33	0	2.00	0	4.33
3	Randolph	0.183	2.847	3.030	0	0	0	1.00	1.00
7	Summers	0.091	0	0.091	0	0	0	0	0
3	Taylor	0	0.315	0.315	0	0	0	0	0
1	Tucker	0	0.124	0.124	0	0	0	0	0
3	Upshur	0.583	3.967	4.550	0	0	0	1.00	1.00
8	Wayne	0.900	0.500	1.400	0	0.33	0	0	0.33
3	Webster	0.099	0.752	0.851	0	0	0	0	0
7 & 8	Wyoming	14.158	0.875	15.033	2.00	0	2.33	0	4.33
	TOTAL*	143.471	49.143	192.614	31.00	3.67	12.67	10.67	58.00

* Data may not add to total due to independent rounding.

TABLE A-17A. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 3: ILLINOIS

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
10	Christian	5.094	0	5.094	0.67	0	0	0	0.67
10	Douglas	2.592	0	2.592	1.00	0	0	0	1.00
10	Franklin	6.619	0	6.619	1.00	0	0	0	1.00
10	Fulton	0	3.505	3.505	0	0	0	0.33	0.33
10	Gallatin	1.785	0.384	2.169	0	0	0	0	0
10	Jackson	0	1.000	1.000	0	0.67	0	0	0.67
10	Jefferson	7.480	0.834	8.314	0	0	0	0	0
10	Johnson	0	0.007	0.007	0	0	0	0	0
10	Kankakee	0	0.200	0.200	0	0	0	0	0
10	Knox	0	1.500	1.500	0	1.00	0	0	1.00
10	Macoupin	3.058	0	3.058	2.00	0	0	0	2.00
10	Montgomery	2.022	0	2.022	1.00	0	0	0	1.00
10	Peoria	0	1.607	1.607	0	0	0	0	0
10	Perry	3.000	15.606	18.606	2.00	0	0	2.00	4.00
10	Randolph	1.938	9.108	11.046	0	2.00	0	1.00	3.00
10	St Clair	3.398	0.769	4.167	0	0	0	0	0
10	Saline	3.000	1.669	4.669	2.00	0	0	0	2.00
10	Stark	0	3.000	3.000	0	2.00	0	0	2.00
10	Vermilion	0.006	0	0.006	0	0	0	0	0
10	Wabash	3.500	0	3.500	2.33	0	0	0	2.33
10	Williamson	2.098	2.187	4.285	0.67	0	0	0	0.67
	TOTAL*	45.591	41.376	86.967	12.67	5.67	0	3.33	21.67

* Data may not add to total due to independent rounding.

Preceding page blank

TABLE A-17B. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 3: INDIANA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
11	Clay	0	1.062	1.062	0	0	0	0	0
11	Daviess	1.500	1.500	3.000	1.00	1.00	0	0	2.00
11	Fountain	0	0.500	0.500	0	0.33	0	0	0.33
11	Gibson	3.000	0	3.000	2.00	0	0	0	2.00
11	Greene	0	0.831	0.831	0	0	0	0	0
11	Knox	1.500	1.500	3.000	1.00	1.00	0	0	2.00
11	Owen	0	0.030	0.030	0	0	0	0	0
11	Parke	0	0.002	0.002	0	0	0	0	0
11	Pike	5.676	5.067	10.743	3.00	1.00	0	0	4.00
11	Spencer	0	0.567	0.567	0	0	0	0	0
11	Sullivan	6.000	3.223	9.223	4.00	1.67	0	0	5.67
11	Vermillion	1.500	2.863	4.363	1.00	0	0	0	1.00
11	Vigo	4.843	0	4.843	2.00	0	0	0	2.00
11	Warrick	0	9.360	9.360	0	2.00	0	0	2.00
	TOTAL*	24.019	26.505	50.524	14.00	7.00	0	0	21.00

* Data may not add to total due to independent rounding.

TABLE A-17C. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 3: EAST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
8	Bell	3.500	3.000	6.500	2.33	2.00	0	0	4.33
8	Boyd	0	0.155	0.155	0	0	0	0	0
8	Breathitt	0.124	8.000	8.124	0	5.33	0	0	5.33
8	Carter	0.005	0.442	0.447	0	0	0	0	0
8	Clay	0.714	0.500	1.214	0	0.33	0	0	0.33
8	Elliott	0	0.552	0.552	0	0	0	0	0
8	Floyd	6.591	2.115	8.706	1.00	0	0.33	0	1.33
8	Greenup	0	0.143	0.143	0	0	0	0	0
8	Harlan	18.549	1.669	20.218	1.00	0	1.33	0	2.33
8	Jackson	0	0.043	0.043	0	0	0	0	0
8	Johnson	0.316	1.000	1.316	0	0.67	0	0	0.67
8	Knott	7.479	1.031	8.510	1.00	0	0.33	0	1.33
8	Knox	0.068	1.186	1.254	0	0	0	0	0
8	Laurel	0.172	0.768	0.940	0	0	0	0	0
8	Lawrence	0.027	0.940	0.967	0	0	0	0	0
8	Lee	0.054	0.188	0.242	0	0	0	0	0
8	Leslie	3.765	1.500	5.265	0.33	1.00	0	0	1.33
8	Letcher	8.093	1.559	9.652	3.00	0.33	0	0	3.33
8	McCreary	1.579	0.138	1.717	0	0	0	0	0
8	Magoffin	0	1.017	1.017	0	0.33	0	0	0.33
8	Martin	5.315	3.467	8.782	1.00	1.00	0.33	0	2.33
8	Morgan	0	0.543	0.543	0	0	0	0	0
8	Owsley	0	0.255	0.255	0	0	0	0	0
8	Perry	4.908	2.617	7.525	1.00	1.33	0	0	2.33
8	Pike	30.888	6.088	36.976	5.00	0.33	2.00	0	7.33
8	Pulaski	0.289	0.262	0.551	0	0	0	0	0
8	Rockcastle	0.005	0.027	0.032	0	0	0	0	0
8	Wayne	0.014	0.033	0.047	0	0	0	0	0
8	Whitley	0.486	1.236	1.722	0	0	0	0	0
8	Wolfe	0	0.011	0.011	0	0	0	0	0
	TOTAL*	92.939	40.486	133.425	15.67	12.67	4.33	0	32.67

* Data may not add to total due to independent rounding.

TABLE A-17D. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 3: WEST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
9	Butler	3.000	0.281	3.281	2.00	0	0	0	2.00
9	Christian	0	0.286	0.286	0	0	0	0	0
9	Daviess	0	2.000	2.000	0	1.33	0	0	1.33
9	Edmonson	0	0.015	0.015	0	0	0	0	0
9	Hancock	0	0.057	0.057	0	0	0	0	0
9	Henderson	6.000	0	6.000	4.00	0	0	0	4.00
9	Hopkins	3.156	5.712	8.868	2.00	1.67	0	0.33	4.00
9	McLean	3.000	1.180	4.180	2.00	0	0	0	2.00
9	Muhlenberg	2.574	22.872	25.446	0	2.00	0	2.00	4.00
9	Ohio	1.664	6.661	8.325	0	0.67	0	0.33	1.00
9	Union	6.000	1.500	7.500	4.00	1.00	0	0	5.00
9	Webster	4.500	0.011	4.511	3.00	0	0	0	3.00
	TOTAL*	29.894	40.574	70.468	17.00	6.67	0	2.67	26.33

* Data may not add to total due to independent rounding.

TABLE A-17E. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 3: OHIO

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
4	Athens	4.500	2.000	6.500	3.00	1.33	0	0	4.33
4	Belmont	7.259	11.481	18.740	2.00	0	0	1.00	3.00
4	Carroll	0	0.254	0.254	0	0	0	0	0
4	Columbiana	0.057	1.500	1.557	0	1.00	0	0	1.00
4	Coshocton	0.881	3.000	3.881	0	2.00	0	0	2.00
4	Gallia	0	0.129	0.129	0	0	0	0	0
4	Guernsey	0	1.011	1.011	0	0	0	0	0
4	Harrison	3.543	3.167	6.710	2.00	0	0	0	2.00
4	Hocking	0	0.355	0.355	0	0	0	0	0
4	Holmes	0	0.817	0.817	0	0	0	0	0
4	Jackson	0.075	0.476	0.551	0	0	0	0	0
4	Jefferson	3.000	5.097	8.097	2.00	0	0	0.33	2.33
4	Lawrence	0	0.108	0.108	0	0	0	0	0
4	Mahoning	0	0.563	0.563	0	0	0	0	0
4	Meigs	3.000	0	3.000	2.00	0	0	0	2.00
4	Monroe	1.500	0	1.500	1.00	0	0	0	1.00
4	Morgan	0	0.621	0.621	0	0	0	0	0
4	Muskingum	1.500	5.182	6.682	1.00	1.00	0	0.33	2.33
4	Noble	0	0.912	0.912	0	0	0	0	0
4	Perry	2.347	1.500	3.847	0	1.00	0	0	1.00
4	Stark	0	0.501	0.501	0	0	0	0	0
4	Tuscarawas	0	1.724	1.724	0	0.67	0	0	0.67
4	Vinton	0.093	1.354	1.447	0	0	0	0	0
4	Wayne	0	0.054	0.054	0	0	0	0	0
	TOTAL*	27.775	41.805	69.560	13.00	7.00	0	1.67	21.67

* Data mat not add to total due to independent rounding.

TABLE A-17F. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 3: PENNSYLVANIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
2	Allegheny	3.255	1.056	4.311	0	0	0	0	0
1 & 2	Armstrong	7.483	4.187	11.670	1.00	2.00	1.00	0	4.00
2	Beaver	0.184	0.500	0.684	0	0.33	0	0	0.33
2	Butler	0.104	3.433	3.537	0	0	0	1.00	1.00
1	Cambria	12.258	2.622	14.880	0.33	0	2.00	0.33	2.67
1	Clarion	3.000	6.522	9.522	2.00	0	0	1.00	3.00
1	Clearfield	1.716	9.003	10.719	0	1.33	0	1.00	2.33
1	Elk	0	1.101	1.101	0	0	0	0	0
1 & 2	Fayette	0.730	4.726	5.456	0	0	0	1.00	1.00
2	Greene	7.565	1.896	9.461	5.00	0	0	0.33	5.33
1 & 2	Indiana	15.064	2.717	17.781	1.00	0	2.00	0.33	3.33
1	Jefferson	1.500	2.097	3.597	1.00	0	0	0.33	1.33
2	Lawrence	0	1.213	1.213	0	0	0	0	0
2	Mercer	0	0.734	0.734	0	0	0	0	0
1	Somerset	2.883	5.291	8.174	1.00	0.33	0	1.00	2.33
2	Venango	0	1.162	1.162	0	0	0	0	0
2	Washington	11.029	4.991	16.020	5.00	0	0	1.00	6.00
1 & 2	Westmoreland	1.073	2.967	4.404	0	0	0	0.33	0.33
	TOTAL*	67.843	56.284	124.127	16.33	4.00	5.00	7.66	33.00

* Data may not add to total due to independent rounding.

TABLE A-17G. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 3: WEST VIRGINIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
3	Barbour	1.500	6.966	8.466	1.00	0	0	2.00	3.00
8	Boone	12.762	0.817	13.579	1.67	0.33	0	0	2.00
3	Braxton	0.011	0	0.011	0	0	0	0	0
6	Brooke	0.952	0	0.952	0	0	0	0	0
8	Clay	0.095	0.010	0.105	0	0	0	0	0
7 & 8	Fayette	3.494	0.634	4.128	0.33	0	0.33	0	0.67
1	Grant	2.999	0.103	3.102	0	0	1.00	0	1.00
7	Greenbriar	0.328	2.874	3.202	0	0	0	0.33	0.33
3	Gilmer	0.001	0.183	0.184	0	0	0	0	0
3	Harrison	3.046	2.435	5.481	1.00	0	0	0.33	1.33
8	Kanawha	8.734	4.500	13.234	2.33	3.00	0	0	5.33
3	Lewis	0.001	1.654	1.655	0	0	0	0.33	0.33
8	Lincoln	0.008	0	0.008	0	0	0	0	0
8	Logan	11.564	0.475	12.039	1.33	0	0	0	1.33
7 & 8	McDowell	15.675	0.679	16.354	3.00	0	1.33	0	4.33
3	Marion	4.446	0	4.446	2.00	0	0	0	2.00
6	Marshall	7.795	0	7.795	4.00	0	0	0	4.00
8	Mason	0.243	0	0.243	0	0	0	0	0
7	Mercer	1.510	0.424	1.934	0	0	0.33	0	0.33
8	Mingo	7.500	0.257	7.757	5.00	0	0	0	5.00
3	Monongalia	9.510	3.017	12.527	0	0	0.33	1.00	1.33
3 & 8	Nicholas	5.507	2.712	8.219	1.00	0	0	1.00	2.00
6	Ohio	2.497	0	2.497	0	0	0	0	0
3	Preston	0.822	5.782	6.604	0	0	0	1.33	1.33
7 & 8	Raleigh	8.224	0.490	8.714	2.33	0	1.00	0	3.33
3	Randolph	0.180	2.438	2.618	0	0	0	1.00	1.00
7	Summers	0.078	0	0.078	0	0	0	0	0
3	Taylor	0	0.270	0.270	0	0	0	0	0
1	Tucker	0	0.107	0.107	0	0	0	0	0
3	Upshur	0.574	3.397	3.971	0	0	0	1.00	1.00
8	Wayne	0.748	0.500	1.248	0	0.33	0	0	0.33
3	Webster	0.097	0.644	0.741	0	0	0	0	0
7 & 8	Wyoming	11.946	0.714	12.660	2.00	0	1.33	0	3.33
	TOTAL*	122.847	42.082	164.928	27.00	3.67	5.67	8.33	44.67

* Data may not add to total due to independent rounding.

TABLE A-18A. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 4: ILLINOIS

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
10	Christian	3.551	0	3.551	0.67	0	0	0	0.67
10	Douglas	1.806	0	1.806	1.00	0	0	0	1.00
10	Franklin	4.614	0	4.614	0	0	0	0	0
10	Fulton	0	2.809	2.809	0	0	0	0	0
10	Gallatin	1.244	0.307	1.551	0	0	0	0	0
10	Jackson	0	1.000	1.000	0	0.67	0	0	0.67
10	Jefferson	5.214	0.669	5.883	0	0	0	0	0
10	Johnson	0	0.006	0.006	0	0	0	0	0
10	Kankakee	0	0.160	0.160	0	0	0	0	0
10	Knox	0	1.500	1.500	0	1.00	0	0	1.00
10	Macoupin	2.131	0	2.131	0	0	0	0	0
10	Montgomery	1.500	0	1.500	1.00	0	0	0	1.00
10	Peoria	0	1.288	1.288	0	0	0	0	0
10	Perry	3.000	12.507	15.507	2.00	0	0	0	2.00
10	Randolph	1.351	7.299	8.650	0	2.00	0	0	2.00
10	St. Clair	2.368	0.616	2.984	0	0	0	0	0
10	Saline	3.000	1.338	4.338	2.00	0	0	0	2.00
10	Stark	0	0.284	0.284	0	0	0	0	0
10	Vermilion	0.004	0	0.004	0	0	0	0	0
10	Wabash	3.500	0	3.500	2.33	0	0	0	2.33
10	Williamson	1.463	1.753	3.216	0.67	0	0	0	0.67
	TOTAL*	34.747	31.535	66.282	9.67	3.67	0	0	13.33

* Data may not add to total due to independent rounding.

Preceding page blank

TABLE A-18B. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 4: INDIANA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
11	Clay	0	0.811	0.811	0	0	0	0	0
11	Daviess	0	1.500	1.500	0	1.00	0	0	1.00
11	Fountain	0	0.500	0.500	0	0.33	0	0	0.33
11	Gibson	3.000	0	3.000	2.00	0	0	0	2.00
11	Greene	0	0.634	0.634	0	0	0	0	0
11	Knox	1.500	0.594	2.094	1.00	0	0	0	1.00
11	Owen	0	0.023	0.023	0	0	0	0	0
11	Parke	0	0.002	0.002	0	0	0	0	0
11	Pike	4.500	3.869	8.369	3.00	1.00	0	0	4.00
11	Spencer	0	0.433	0.433	0	0	0	0	0
11	Sullivan	6.000	2.500	8.500	4.00	1.67	0	0	5.67
11	Vermillion	0	2.187	2.187	0	0	0	0	0
11	Vigo	3.306	0	3.306	0	0	0	0	0
11	Warrick	0	7.148	7.148	0	1.00	0	0	1.00
	TOTAL*	18.306	20.201	38.507	10.00	5.00	0	0	15.00

* Data may not add to total due to independent rounding.

TABLE A-18C. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 4: EAST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
8	Bell	3.500	3.000	6.500	2.33	2.00	0	0	4.33
8	Boyd	0	0.116	0.116	0	0	0	0	0
8	Breathitt	0.094	5.000	5.094	0	3.33	0	0	3.33
8	Carter	0.003	0.331	0.334	0	0	0	0	0
8	Clay	0.537	0.500	1.037	0	0.33	0	0	0.33
8	Elliott	0	0.413	0.413	0	0	0	0	0
8	Floyd	4.962	1.582	6.544	1.00	0	0	0	1.00
8	Greenup	0	0.107	0.107	0	0	0	0	0
8	Harlan	13.964	1.249	15.213	1.00	0	0	0	1.00
8	Jackson	0	0.032	0.032	0	0	0	0	0
8	Johnson	0.238	1.000	1.238	0	0.67	0	0	0.67
8	Knott	5.630	0.771	6.401	1.00	0	0	0	1.00
8	Knox	0.051	0.888	0.939	0	0	0	0	0
8	Laurel	0.129	0.574	0.703	0	0	0	0	0
8	Lawrence	0.020	0.704	0.724	0	0	0	0	0
8	Lee	0.041	0.141	0.182	0	0	0	0	0
8	Leslie	2.835	1.500	4.335	0.33	1.00	0	0	1.33
8	Letcher	6.093	1.166	7.259	3.00	0.33	0	0	3.33
8	McCreary	1.189	0.103	1.292	0	0	0	0	0
8	Magoffin	0	0.761	0.761	0	0.33	0	0	0.33
8	Martin	4.001	2.594	6.595	1.00	1.00	0	0	2.00
8	Morgan	0	0.406	0.406	0	0	0	0	0
8	Owsley	0	0.191	0.191	0	0	0	0	0
8	Perry	3.695	2.000	5.695	1.00	1.33	0	0	2.33
8	Pike	23.254	4.554	27.808	5.00	0.33	0	0	5.33
8	Pulaski	0.218	0.196	0.414	0	0	0	0	0
8	Rockcastle	0.003	0.020	0.023	0	0	0	0	0
8	Wayne	0.010	0.025	0.035	0	0	0	0	0
8	Whitley	0.366	0.925	1.291	0	0	0	0	0
8	Wolfe	0	0.008	0.008	0	0	0	0	0
	TOTAL*	70.833	30.856	101.689	15.67	10.67	0	0	26.33

* Data may not add to totals due to independent rounding.

TABLE A-18D. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 4: WEST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
9	Butler	3.000	0.208	3.208	2.00	0	0	0	2.00
9	Christian	0	0.212	0.212	0	0	0	0	0
9	Daviess	0	2.000	2.000	0	1.33	0	0	1.33
9	Edmonson	0	0.011	0.011	0	0	0	0	0
9	Hancock	0	0.042	0.042	0	0	0	0	0
9	Henderson	4.500	0	4.500	3.00	0	0	0	3.00
9	Hopkins	1.500	4.225	5.725	1.00	0.67	0	0	1.67
9	McLean	3.000	0.873	3.873	2.00	0	0	0	2.00
9	Muhlenberg	1.083	16.918	18.001	0	2.00	0	0	2.00
9	Ohio	0.700	4.927	5.627	0	0.67	0	0	0.67
9	Union	6.000	1.500	7.500	4.00	1.00	0	0	5.00
9	Webster	3.000	0.008	3.008	2.00	0	0	0	2.00
	TOTAL*	22.783	30.923	53.706	14.00	5.67	0	0	19.67

* Data may not add to total due to independent rounding.

TABLE A-18E. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 4: OHIO

BOM Dist No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
4	Athens	3.000	0.500	3.500	2.00	0.33	0	0	2.33
4	Belmont	5.659	8.897	14.556	2.00	0	0	0	2.00
4	Carroll	0	0.197	0.197	0	0	0	0	0
4	Columbiana	0.045	0.668	0.713	0	0	0	0	0
4	Coshocton	0.687	3.000	3.687	0	2.00	0	0	2.00
4	Gallia	0	0.100	0.100	0	0	0	0	0
4	Guernsey	0	0.784	0.784	0	0	0	0	0
4	Harrison	3.000	2.454	5.454	2.00	0	0	0	2.00
4	Hocking	0	0.275	0.275	0	0	0	0	0
4	Holmes	0	0.633	0.633	0	0	0	0	0
4	Jackson	0.059	0.369	0.428	0	0	0	0	0
4	Jefferson	3.000	3.949	6.949	2.00	0	0	0	2.00
4	Lawrence	0	0.083	0.083	0	0	0	0	0
4	Mahoning	0	0.437	0.437	0	0	0	0	0
4	Meigs	3.000	0	3.000	2.00	0	0	0	2.00
4	Monroe	0.767	0	0.767	0	0	0	0	0
4	Morgan	0	0.481	0.481	0	0	0	0	0
4	Muskingum	0.035	4.015	4.050	0	0	0	0	0
4	Noble	0	0.707	0.707	0	0	0	0	0
4	Perry	1.830	1.500	3.330	0	1.00	0	0	1.00
4	Stark	0	0.389	0.389	0	0	0	0	0
4	Tuscarawas	0	1.336	1.336	0	0.67	0	0	0.67
4	Vinton	0.073	1.049	1.122	0	0	0	0	0
4	Wayne	0	0.042	0.042	0	0	0	0	0
	TOTAL*	21.153	31.862	53.015	10.00	4.00	0	0	14.00

* Data may not add to total due to independent rounding.

TABLE A-18F. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 4: PENNSYLVANIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
2	Allegheny	2.435	0.799	3.234	0	0	0	0	0
1 & 2	Armstrong	6.046	3.190	9.236	0	2.00	0.33	0	2.33
2	Beaver	0.138	0.500	0.638	0	0.33	0	0	0.33
2	Butler	0.078	2.598	2.676	0	0	0	0	0
1	Cambria	9.905	1.998	11.903	0.33	0	0.33	0	0.67
1	Clarion	1.500	4.971	6.471	1.00	0	0	0	1.00
1	Clearfield	1.387	6.862	8.249	0	0.33	0	0.33	0.67
1	Elk	0	0.839	0.839	0	0	0	0	0
1 & 2	Fayette	0.547	3.567	4.123	0	0	0	0.33	0.33
2	Greene	6.000	1.435	7.435	4.00	0	0	0	4.00
1 & 2	Indiana	12.156	2.069	14.225	1.00	0	0.33	0	1.33
1	Jefferson	0.129	1.598	1.727	0	0	0	0	0
2	Lawrence	0	0.918	0.918	0	0	0	0	0
2	Mercer	0	0.556	0.556	0	0	0	0	0
1	Somerset	2.330	4.032	6.362	1.00	0.33	0	0	1.33
2	Venango	0	0.879	0.879	0	0	0	0	0
2	Washington	8.250	3.777	12.027	5.00	0	0	0.33	5.33
1 & 2	Westmoreland	0.806	2.249	3.055	0	0	0	0	0
	TOTAL*	51.707	42.897	94.604	12.33	3.00	1.00	1.00	17.33

* Data may not add to total due to independent rounding.

TABLE A-18G. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 4: WEST VIRGINIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
3	Barbour	0.925	5.309	6.234	0	0	0	1.00	1.00
8	Boone	9.097	0.500	9.597	1.67	0.33	0	0	2.00
3	Braxton	0.008	0	0.008	0	0	0	0	0
6	Brooke	0.726	0	0.726	0	0	0	0	0
8	Clay	0.068	0.002	0.070	0	0	0	0	0
7 & 8	Fayette	2.588	0.352	2.940	0.33	0	0	0	0.33
1	Grant	2.286	0.079	2.365	0	0	1.00	0	1.00
7	Greenbriar	0.250	2.190	2.440	0	0	0	0.33	0.33
3	Gilmer	0.001	0.139	0.140	0	0	0	0	0
3	Harrison	2.353	1.856	4.209	1.00	0	0	0	1.00
8	Kanawha	6.226	4.500	10.726	2.33	3.00	0	0	5.33
3	Lewis	0.001	1.260	1.261	0	0	0	0	0
8	Lincoln	0.006	0	0.006	0	0	0	0	0
8	Logan	8.243	0.075	8.318	1.33	0	0	0	1.33
7 & 8	McDowell	11.530	0.435	11.965	3.00	0	0.33	0	3.33
3	Marion	3.434	0	3.434	0	0	0	0	0
6	Marshall	5.941	0	5.941	3.00	0	0	0	3.00
8	Mason	0.173	0	0.173	0	0	0	0	0
7	Mercer	1.151	0.323	1.474	0	0	0	0	0
8	Mingo	7.500	0.041	7.541	5.00	0	0	0	5.00
3	Monongalia	7.347	2.300	9.647	0	0	0.33	0.33	0.67
3 & 8	Nicholas	4.074	1.905	5.979	1.00	0	0	0.33	1.33
6	Ohio	1.903	0	1.903	0	0	0	0	0
3	Preston	0.635	4.406	5.041	0	0	0	1.00	1.00
7 & 8	Raleigh	7.100	0.206	7.306	2.33	0	0.33	0	2.67
3	Randolph	0.139	1.858	1.997	0	0	0	0.33	0.33
7	Summers	0.059	0	0.059	0	0	0	0	0
3	Taylor	0	0.206	0.206	0	0	0	0	0
1	Tucker	0	0.081	0.081	0	0	0	0	0
3	Upshur	0.443	2.589	3.032	0	0	0	0.33	0.33
8	Wayne	0.533	0.500	1.033	0	0.33	0	0	0.33
3	Webster	0.075	0.491	0.566	0	0	0	0	0
7 & 8	Wyoming	8.813	0.469	9.282	2.00	0	0.33	0	2.33
	TOTAL*	93.628	32.071	125.699	23.00	3.67	2.33	3.67	32.67

* Data may not add to total due to independent rounding.

TABLE A-19A. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 5: ILLINOIS

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
10	Christian	5.526	0	5.526	0.67	0	0	0	0.67
10	Douglas	2.811	0	2.811	1.00	0	0	0	1.00
10	Franklin	7.181	0	7.181	1.00	0	0	0	1.00
10	Fulton	0	3.773	3.773	0	1.00	0	0.33	1.33
10	Gallatin	1.937	0.413	2.350	0	0	0	0	0
10	Jackson	0	1.000	1.000	0	0.67	0	0	0.67
10	Jefferson	8.114	0.898	9.012	0	0	0	0	0
10	Johnson	0	0.008	0.008	0	0	0	0	0
10	Kankakee	0	0.216	0.216	0	0	0	0	0
10	Knox	0	1.533	1.533	0	1.00	0	0	1.00
10	Macoupin	3.317	0	3.317	2.00	0	0	0	2.00
10	Montgomery	2.193	0	2.193	1.00	0	0	0	1.00
10	Peoria	0	1.730	1.730	0	0	0	0	0
10	Perry	3.000	16.800	19.800	2.00	0	0	2.33	4.33
10	Randolph	2.103	9.805	11.908	0	2.00	0	1.00	3.00
10	St. Clair	3.686	0.827	4.513	0	0	0	0	0
10	Saline	3.000	1.797	4.797	2.00	0	0	0	2.00
10	Stark	0	3.000	3.000	0	2.00	0	0	2.00
10	Vermilion	0.007	0	0.007	0	0	0	0	0
10	Wabash	3.500	0	3.500	2.33	0	0	0	2.33
10	Williamson	2.276	2.354	4.630	0.67	0	0	0.33	1.00
	TOTAL*	48.652	44.154	92.806	12.67	6.67	0	4.00	23.33

* Data may not add to total due to independent rounding.

Preceding page blank

TABLE A-19B. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 5: INDIANA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
11	Clay	0	1.500	1.500	0	1.00	0	0	1.00
11	Daviess	1.500	1.500	3.000	1.00	1.00	0	0	2.00
11	Fountain	0	0.500	0.500	0	0.33	0	0	0.33
11	Gibson	3.000	0	3.000	2.00	0	0	0	2.00
11	Greene	0	0.882	0.882	0	0	0	0	0
11	Knox	1.500	1.500	3.000	1.00	1.00	0	0	2.00
11	Owen	0	0.032	0.032	0	0	0	0	0
11	Parke	0	0.002	0.002	0	0	0	0	0
11	Pike	5.736	5.376	11.112	3.00	1.00	0	0	4.00
11	Spencer	0	0.602	0.602	0	0	0	0	0
11	Sullivan	6.000	3.420	9.420	4.00	1.67	0	0	5.67
11	Vermillion	1.500	3.038	4.538	1.00	0	0	0	1.00
11	Vigo	4.895	0	4.895	2.00	0	0	0	2.00
11	Warrick	1.500	9.932	11.432	1.00	2.00	0	0.33	3.33
	TOTAL*	25.631	28.285	53.916	15.00	8.00	0	0.33	23.33

* Data may not add to total due to independent rounding.

TABLE A-19C. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 5: EAST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
8	Bell	3.500	3.000	6.500	2.33	2.00	0	0	4.33
8	Boyd	0	0.171	0.171	0	0	0	0	0
8	Breathitt	0.133	8.000	8.133	0	5.33	0	0	5.33
8	Carter	0.005	0.487	0.492	0	0	0	0	0
8	Clay	0.764	0.500	1.264	0	0.33	0	0	0.33
8	Elliott	0	0.608	0.608	0	0	0	0	0
8	Floyd	7.051	2.328	9.379	1.00	0	1.00	0	2.00
8	Greenup	0	0.158	0.158	0	0	0	0	0
8	Harlan	19.843	1.838	21.681	1.00	0	2.33	0	3.33
8	Jackson	0	0.047	0.047	0	0	0	0	0
8	Johnson	0.338	1.044	1.382	0	0.67	0	0	0.67
8	Knott	8.000	1.135	9.135	1.00	0	1.00	0	2.00
8	Knox	0.072	1.306	1.378	0	0	0	0	0
8	Laurel	0.184	0.845	1.029	0	0	0	0	0
8	Lawrence	0.029	1.035	1.064	0	0	0	0	0
8	Lee	0.058	0.207	0.265	0	0	0	0	0
8	Leslie	4.028	1.500	5.528	0.33	1.00	0.33	0	1.67
8	Letcher	8.658	1.716	10.374	3.00	0.33	0.33	0	3.67
8	McCreary	1.689	0.152	1.841	0	0	0	0	0
8	Magoffin	0	1.119	1.119	0	0.33	0	0	0.33
8	Martin	5.686	3.818	9.504	1.00	1.00	0.33	0	2.33
8	Morgan	0	0.597	0.597	0	0	0	0	0
8	Owsley	0	0.281	0.281	0	0	0	0	0
8	Perry	5.251	2.881	8.132	1.00	1.33	0.33	0	2.67
8	Pike	33.043	6.703	39.746	5.00	0.33	3.33	0	8.67
8	Pulaski	0.309	0.288	0.597	0	0	0	0	0
8	Rockcastle	0.005	0.030	0.035	0	0	0	0	0
8	Wayne	0.014	0.036	0.050	0	0	0	0	0
8	Whitley	0.520	1.361	1.881	0	0	0	0	0
8	Wolfe	0	0.012	0.012	0	0	0	0	0
	TOTAL*	99.179	43.205	142.384	15.67	12.67	9.00	0	37.33

* Data may not add to total due to independent rounding.

TABLE A-19D. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 5: WEST KENTUCKY

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY) Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
9	Butler	3.000	0.301	3.301	2.00	0	0	0	2.00
9	Christian	0	0.307	0.307	0	0	0	0	0
9	Daviess	0	2.000	2.000	0	1.33	0	0	1.33
9	Edmonson	0	0.016	0.016	0	0	0	0	0
9	Hancock	0	0.061	0.061	0	0	0	0	0
9	Henderson	6.000	0	6.000	4.00	0	0	0	4.00
9	Hopkins	3.373	6.132	9.505	2.00	1.67	0	0.33	4.00
9	McLean	3.000	1.267	4.267	2.00	0	0	0	2.00
9	Muhlenberg	2.750	24.553	27.303	0	2.00	0	3.00	5.00
9	Ohio	1.778	7.150	8.928	0	1.67	0	0.33	2.00
9	Union	6.000	1.500	7.500	4.00	1.00	0	0	5.00
9	Webster	6.000	0.011	6.011	4.00	0	0	0	4.00
	TOTAL*	31.901	43.298	75.199	18.00	7.67	0	3.67	29.33

* Data may not add to total due to independent rounding.

TABLE A-19E. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 5: OHIO

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
4	Athens	6.000	2.000	8.000	4.00	1.33	0	0	5.33
4	Belmont	6.680	12.435	19.115	2.00	1.00	0	1.33	4.33
4	Carroll	0	0.275	0.275	0	0	0	0	0
4	Columbiana	0.053	1.500	1.553	0	1.00	0	0	1.00
4	Coshocton	0.810	3.000	3.810	0	2.00	0	0	2.00
4	Gallia	0	0.139	0.139	0	0	0	0	0
4	Guernsey	1.500	1.095	2.595	1.00	0	0	0	1.00
4	Harrison	3.260	3.430	6.690	2.00	0	0	0.33	2.33
4	Hocking	0	0.385	0.385	0	0	0	0	0
4	Holmes	0	0.885	0.885	0	0	0	0	0
4	Jackson	0.069	0.515	0.584	0	0	0	0	0
4	Jefferson	3.000	5.520	8.520	2.00	0	0	1.00	3.00
4	Lawrence	0	0.116	0.116	0	0	0	0	0
4	Mahoning	0	0.610	0.610	0	0	0	0	0
4	Meigs	3.000	0	3.000	2.00	0	0	0	2.00
4	Monroe	1.500	0	1.500	1.00	0	0	0	1.00
4	Morgan	0	0.672	0.672	0	0	0	0	0
4	Muskingum	1.500	5.612	7.112	1.00	1.00	0	0.33	2.33
4	Noble	0	0.987	0.987	0	0	0	0	0
4	Perry	2.160	1.500	3.660	0	1.00	0	0	1.00
4	Stark	0	0.543	0.543	0	0	0	0	0
4	Tuscarawas	0	1.867	1.867	0	0.67	0	0	0.67
4	Vinton	0.086	1.466	1.552	0	0	0	0	0
4	Wayne	0	0.058	0.058	0	0	0	0	0
	TOTAL*	29.618	44.612	74.230	15.00	8.00	0	3.00	26.00

* Data may not add to total due to independent rounding.

TABLE A-19F. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

SCENARIO 5: PENNSYLVANIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines(1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
2	Allegheny	2.998	1.128	4.126	0	0	0	0	0
1 & 2	Armstrong	8.040	4.468	12.508	1.00	2.00	1.33	0	4.33
2	Beaver	0.170	0.500	0.670	0	0.33	0	0	0.33
2	Butler	0.096	3.669	3.765	0	0	0	1.00	1.00
1	Cambria	13.175	2.798	15.973	0.33	0	2.33	1.00	3.67
1	Clarion	3.000	6.960	9.960	2.00	0	0	2.00	4.00
1	Clearfield	1.844	9.608	11.452	0	1.33	0.33	2.00	3.67
1	Elk	0	1.174	1.174	0	0	0	0	0
1 & 2	Fayette	0.674	5.050	5.724	0	0	0	1.00	1.00
2	Greene	9.000	2.026	11.026	6.00	0	0	0.33	6.33
1 & 2	Indiana	16.147	2.899	19.046	1.00	0	3.00	0.33	4.33
1	Jefferson	1.500	2.238	3.738	1.00	0	0	0.33	1.33
2	Lawrence	0	1.296	1.296	0	0	0	0	0
2	Mercer	1.500	0.785	2.285	1.00	0	0	0	1.00
1	Somerset	3.099	5.646	8.745	1.00	0.33	0	1.00	2.33
2	Venango	0	1.241	1.241	0	0	0	0	0
2	Washington	10.158	5.334	15.492	5.00	0	0	1.00	6.00
1 & 2	Westmoreland	0.998	3.170	4.168	0	0	0	0.33	0.33
	TOTAL*	72.399	60.063	132.462	18.33	4.00	7.00	10.33	39.67

* Data may not add to total due to independent rounding.

TABLE A-19G. COAL PRODUCTION AND NUMBER OF NEW MINES IN 2000 FOR ORBES COUNTIES AND BUREAU OF MINES (BOM) DISTRICTS BY TYPE OF MINE

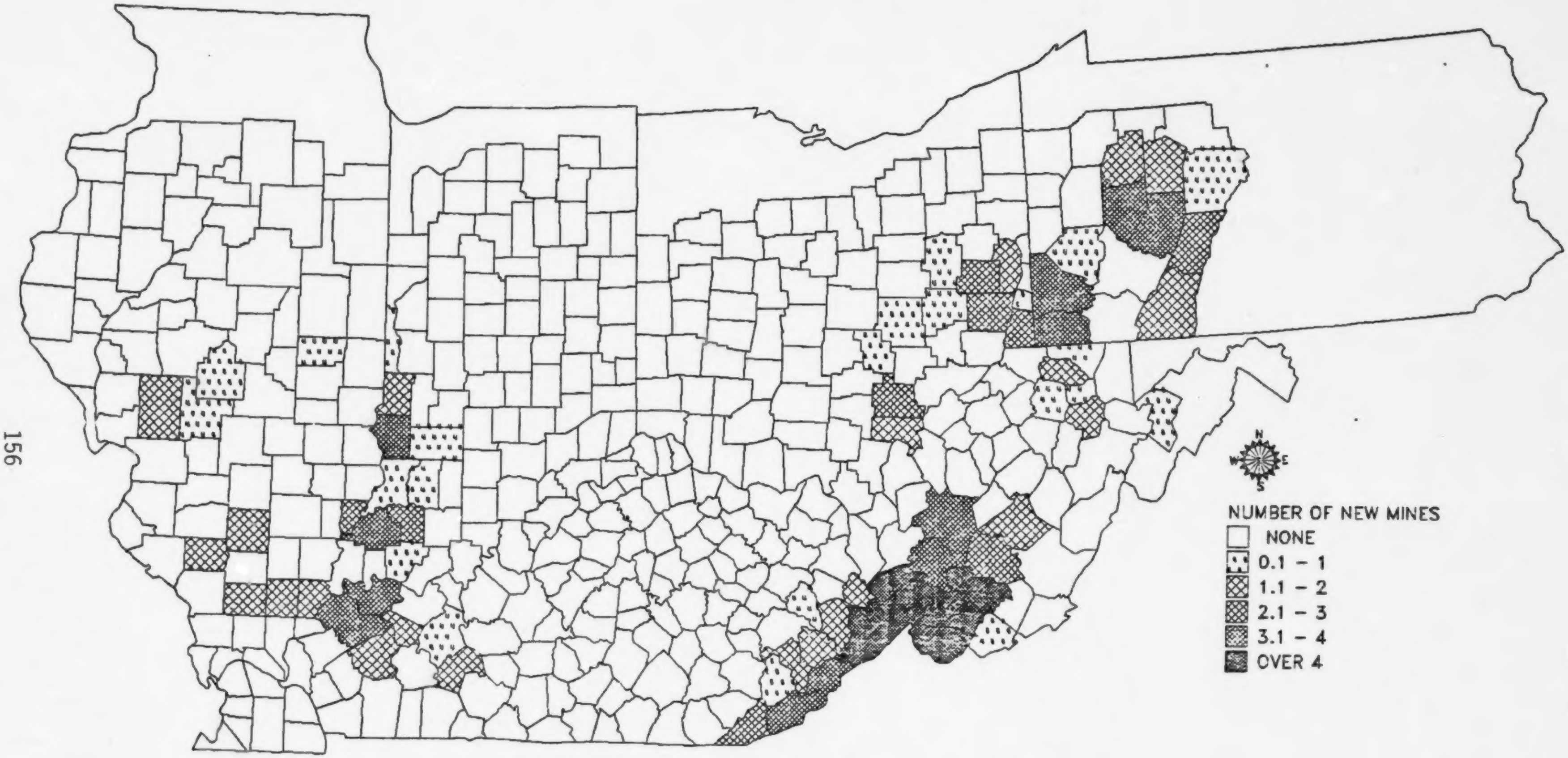
SCENARIO 5: WEST VIRGINIA

BOM Dist. No.	County	Coal Production (MMTPY)			Number of New Mines (1.5 MMTPY)				
					Assigned		Allocated		
		Un'grd	Surface	Total	Un'grd	Surface	Un'grd	Surface	Total
3	Barbour	3.000	7.433	10.433	2.00	0	0	2.00	4.00
8	Boone	13.797	0.978	14.775	1.67	0.33	0	0	2.00
3	Braxton	0.011	0	0.011	0	0	0	0	0
6	Brooke	1.016	0	1.016	0	0	0	0	0
8	Clay	0.103	0.012	0.115	0	0	0	0	0
7 & 8	Fayette	3.749	0.705	4.454	0.33	0	0.33	0	0.67
1	Grant	3.201	0.110	3.311	0	0	1.00	0	1.00
7	Greenbriar	0.350	3.067	3.417	0	0	0	0.33	0.33
3	Gilmer	0.001	0.195	0.196	0	0	0	0	0
3	Harrison	2.966	2.599	5.565	1.00	0	0	1.00	2.00
8	Kanawha	9.442	4.500	13.942	2.33	3.00	0	0	5.33
3	Lewis	0.001	1.765	1.766	0	0	0	0.33	0.33
8	Lincoln	0.009	0	0.009	0	0	0	0	0
8	Logan	12.502	0.569	13.071	1.33	0	0	0	1.33
7 & 8	McDowell	16.845	0.742	17.587	3.00	0	2.00	0	5.00
3	Marion	4.328	0	4.328	2.00	0	0	0	2.00
6	Marshall	8.319	0	8.319	4.00	0	0	0	4.00
8	Mason	0.263	0	0.263	0	0	0	0	0
7	Mercer	1.612	0.452	2.064	0	0	0.33	0	0.33
8	Mingo	7.500	0.308	7.808	5.00	0	0	0	5.00
3	Monongalia	9.260	3.220	12.480	0	0	1.00	1.00	2.00
3 & 8	Nicholas	6.267	2.929	9.196	2.00	0	0	1.00	3.00
6	Ohio	2.665	0	2.665	0	0	0	0	0
3	Preston	0.800	6.170	6.970	0	0	0	2.00	2.00
7 & 8	Raleigh	8.541	0.558	9.099	2.33	0	1.00	0	3.33
3	Randolph	0.175	2.602	2.777	0	0	0	1.00	1.00
7	Summers	0.083	0	0.083	0	0	0	0	0
3	Taylor	0	0.288	0.288	0	0	0	0	0
1	Tucker	0	0.114	0.114	0	0	0	0	0
3	Upshur	0.559	3.625	4.184	0	0	0	1.00	1.00
8	Wayne	0.809	0.500	1.309	0	0.33	0	0	0.33
3	Webster	0.095	0.687	0.782	0	0	0	0	0
7 & 8	Wyoming	12.831	0.778	13.609	2.00	0	1.33	0	3.33
	TOTAL*	131.100	44.906	176.006	29.00	3.67	7.00	9.67	49.33

* Data may not add to total due to independent rounding.

NEW UNDERGROUND MINES: SCENARIO 1

1.5 MMTPY CAPACITY PER MINE


N
W
E
S
NUMBER OF NEW MINES
NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME

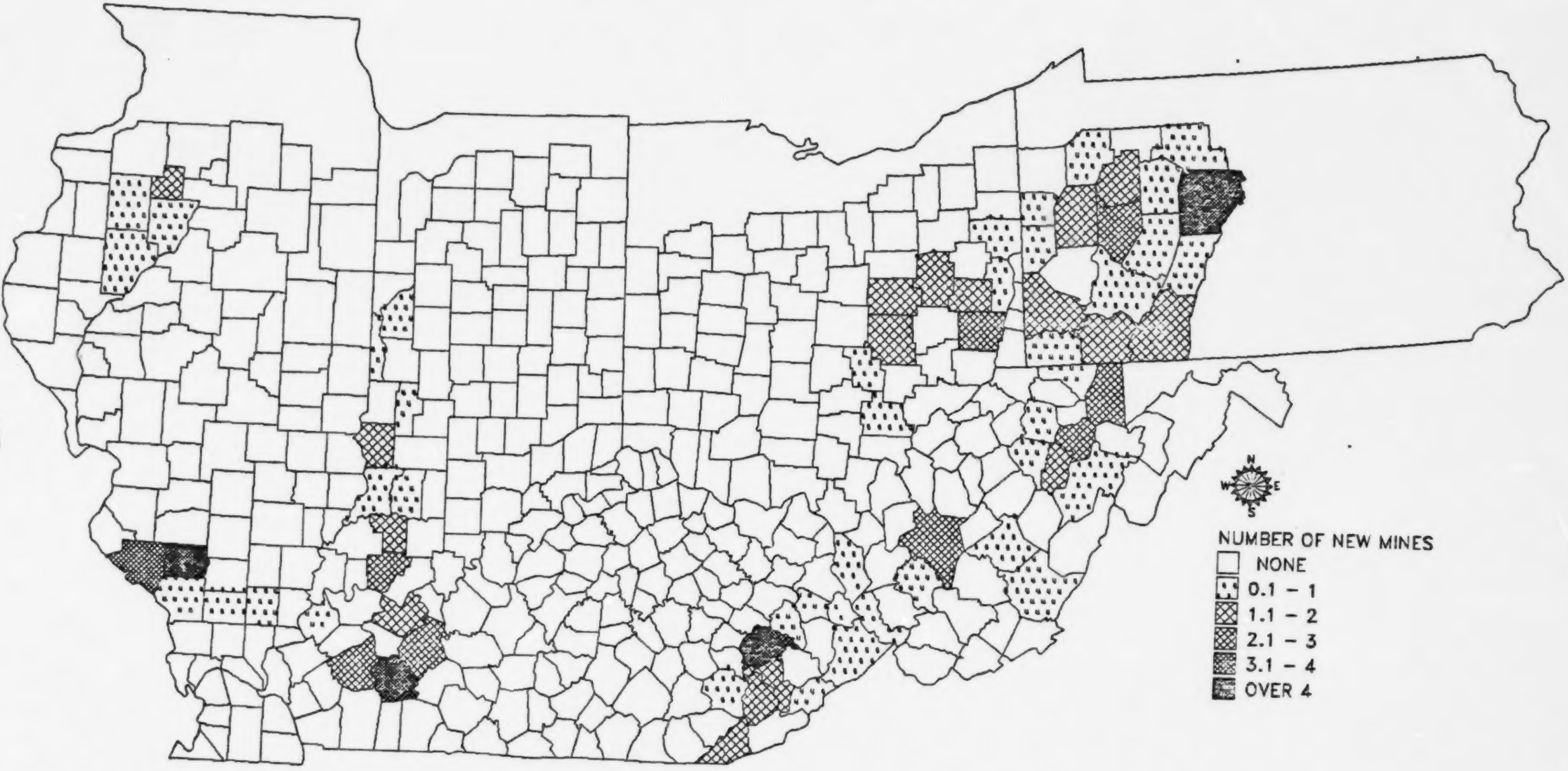
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY

BY CAGIS/UICC, MARCH, 1980

FIGURE 1

NEW SURFACE MINES: SCENARIO 1

1.5 MMTPY CAPACITY PER MINE


N
S
E
W
NUMBER OF NEW MINES
NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME

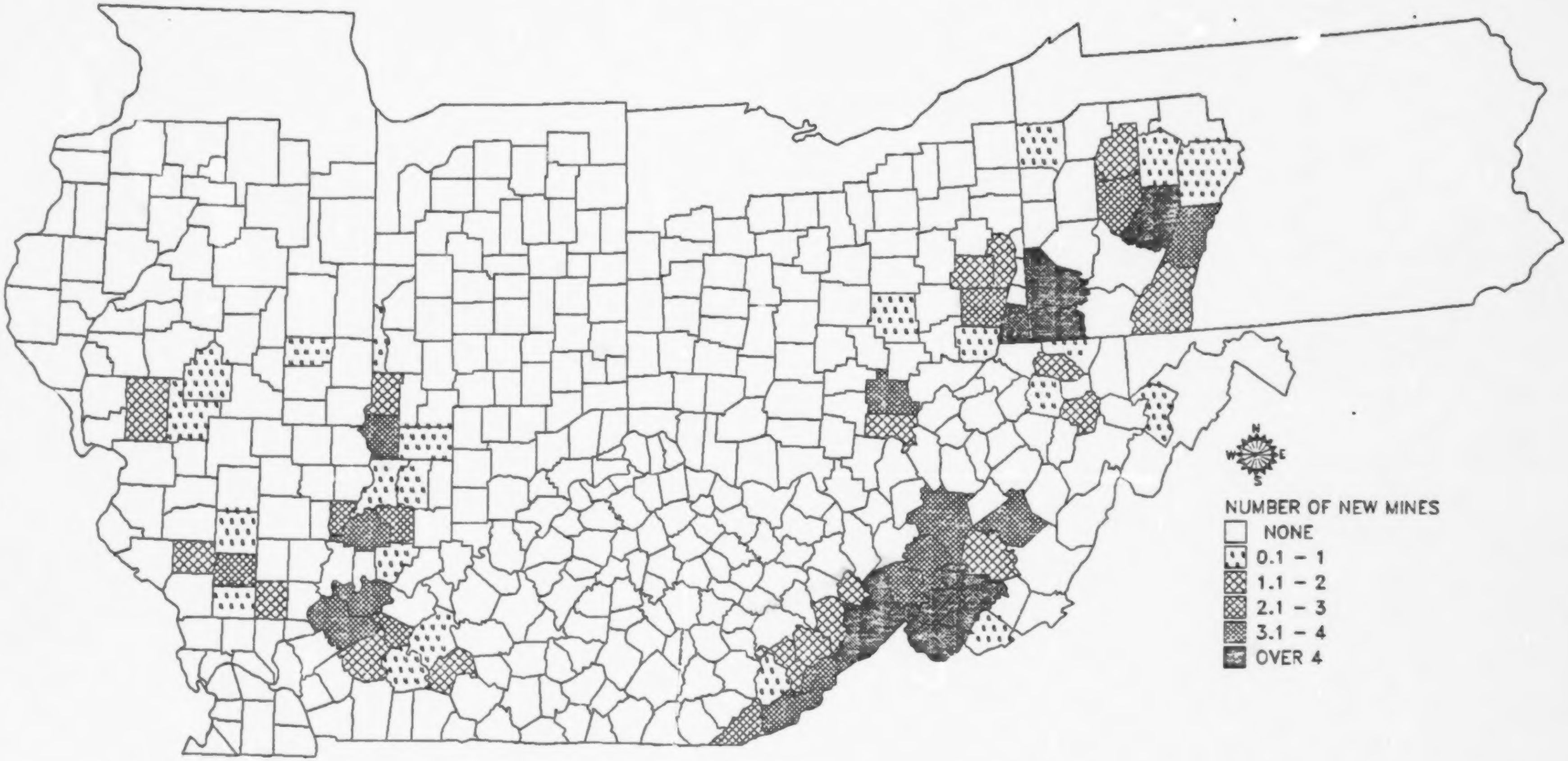
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY

BY CAGIS/UICC, MARCH, 1980

FIGURE 2

NEW UNDERGROUND MINES: SCENARIO 2

1.5 MMTPY CAPACITY PER MINE


N
W
E
S
NUMBER OF NEW MINES
NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME

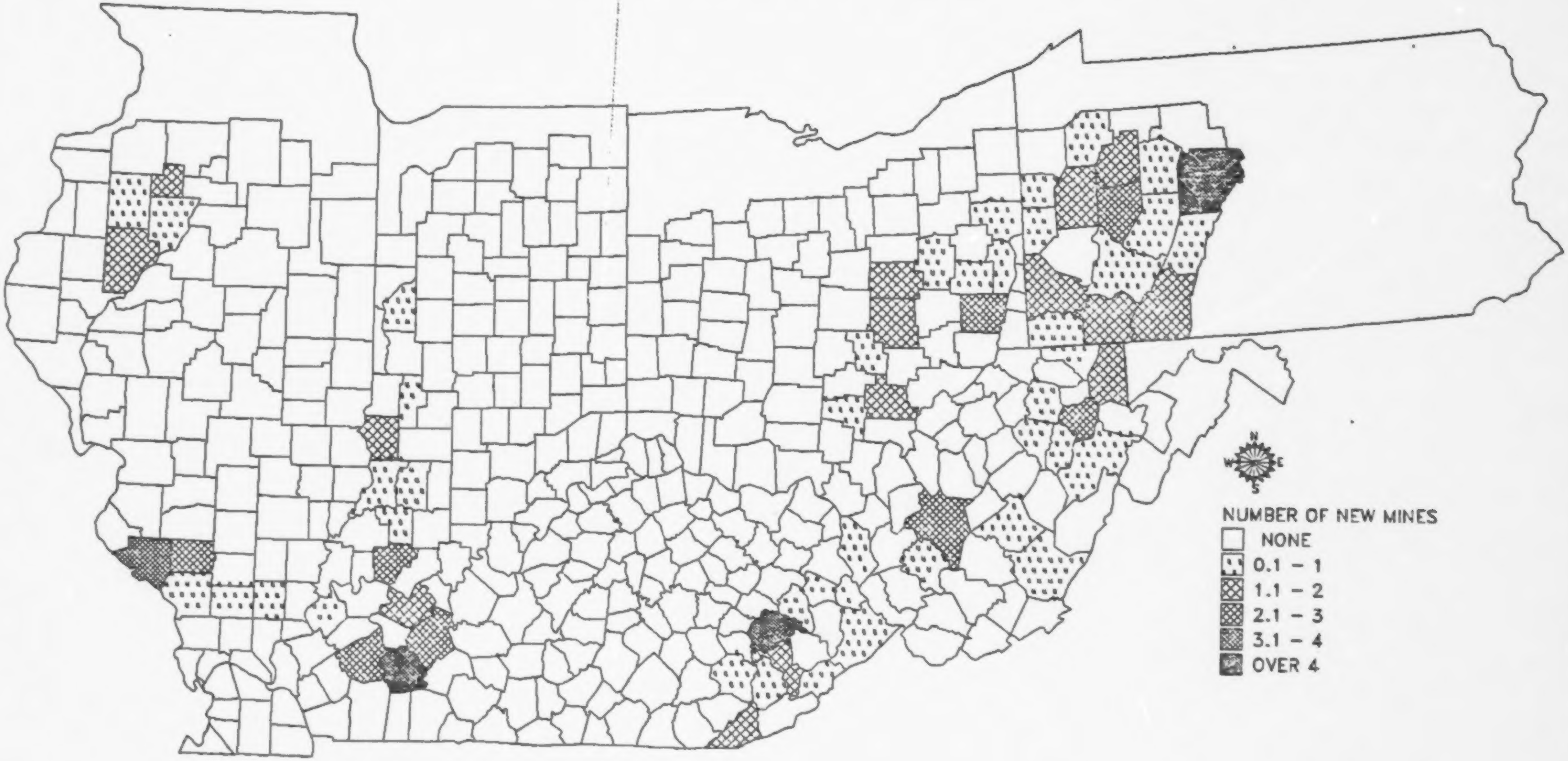
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY

BY CAGIS/UICC, MARCH, 1980

FIGURE 3

NEW SURFACE MINES: SCENARIO 2

1.5 MMTPY CAPACITY PER MINE


N
W
E
S
NUMBER OF NEW MINES
☐ NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME

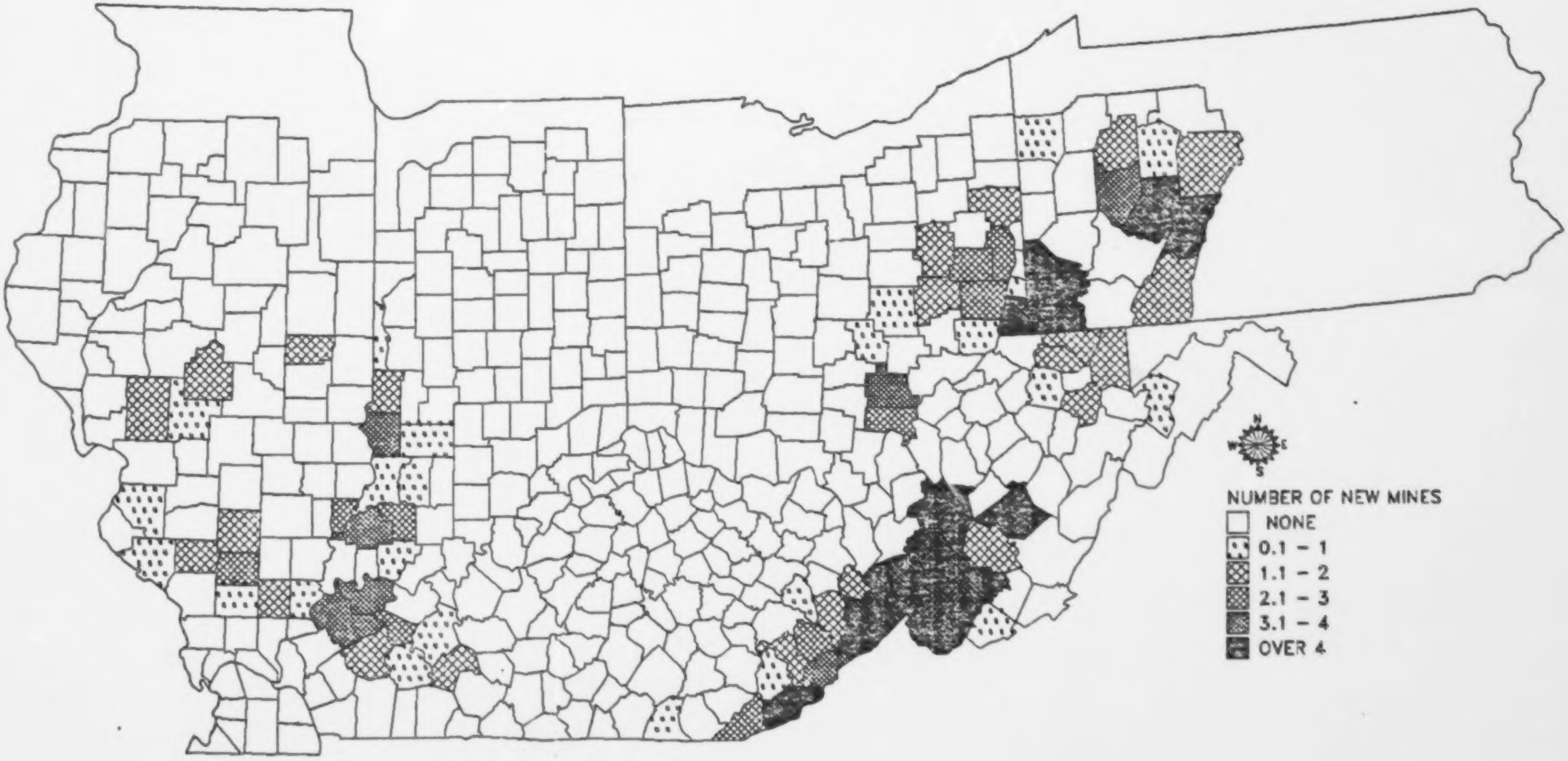
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY

BY CAGIS/UICC, MARCH, 1980

FIGURE 4

NEW UNDERGROUND MINES: SCENARIO 2a

1.5 MMTPY CAPACITY PER MINE

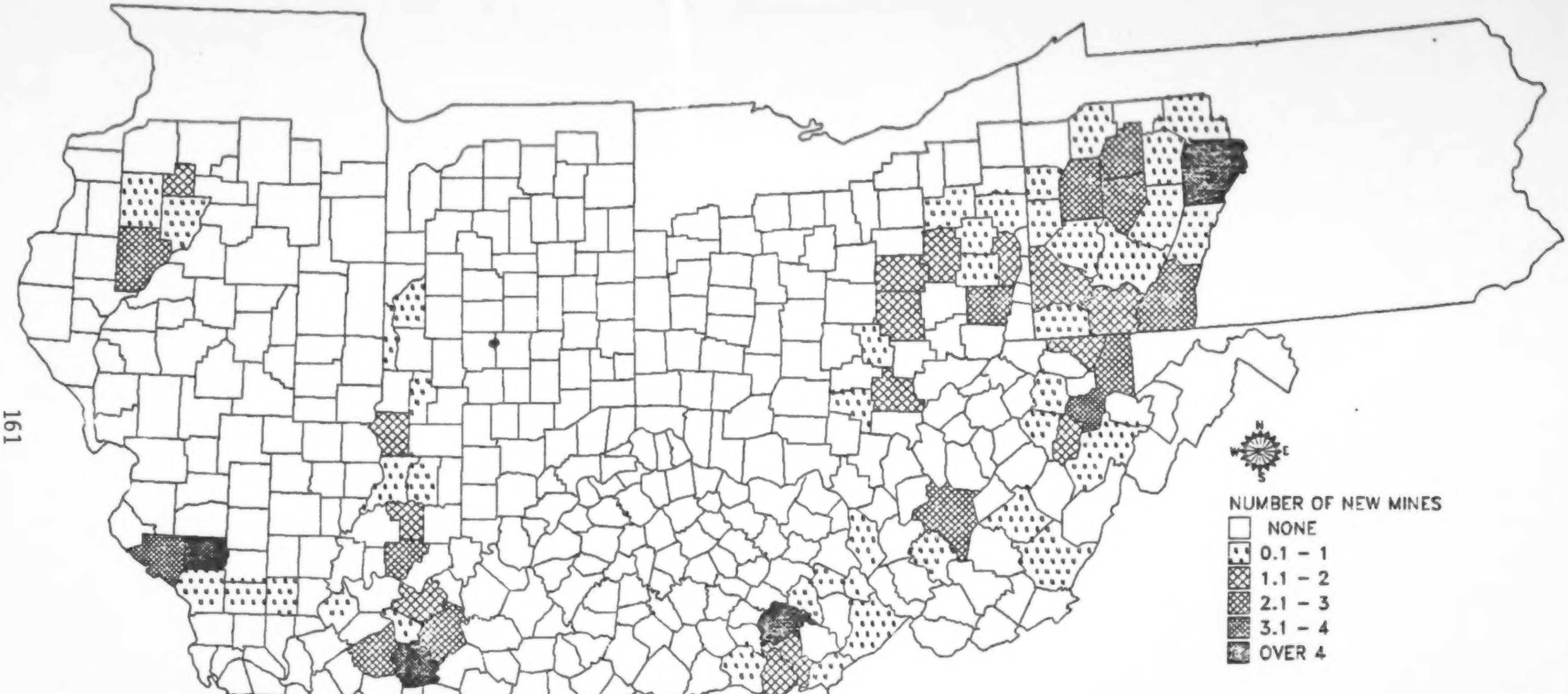

N
W
E
S
NUMBER OF NEW MINES
NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY
BY CAGIS/UICC, MARCH, 1980

FIGURE 5

NEW SURFACE MINES: SCENARIO 2a

1.5 MMTPY CAPACITY PER MINE


N
W
E
S
NUMBER OF NEW MINES
NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME

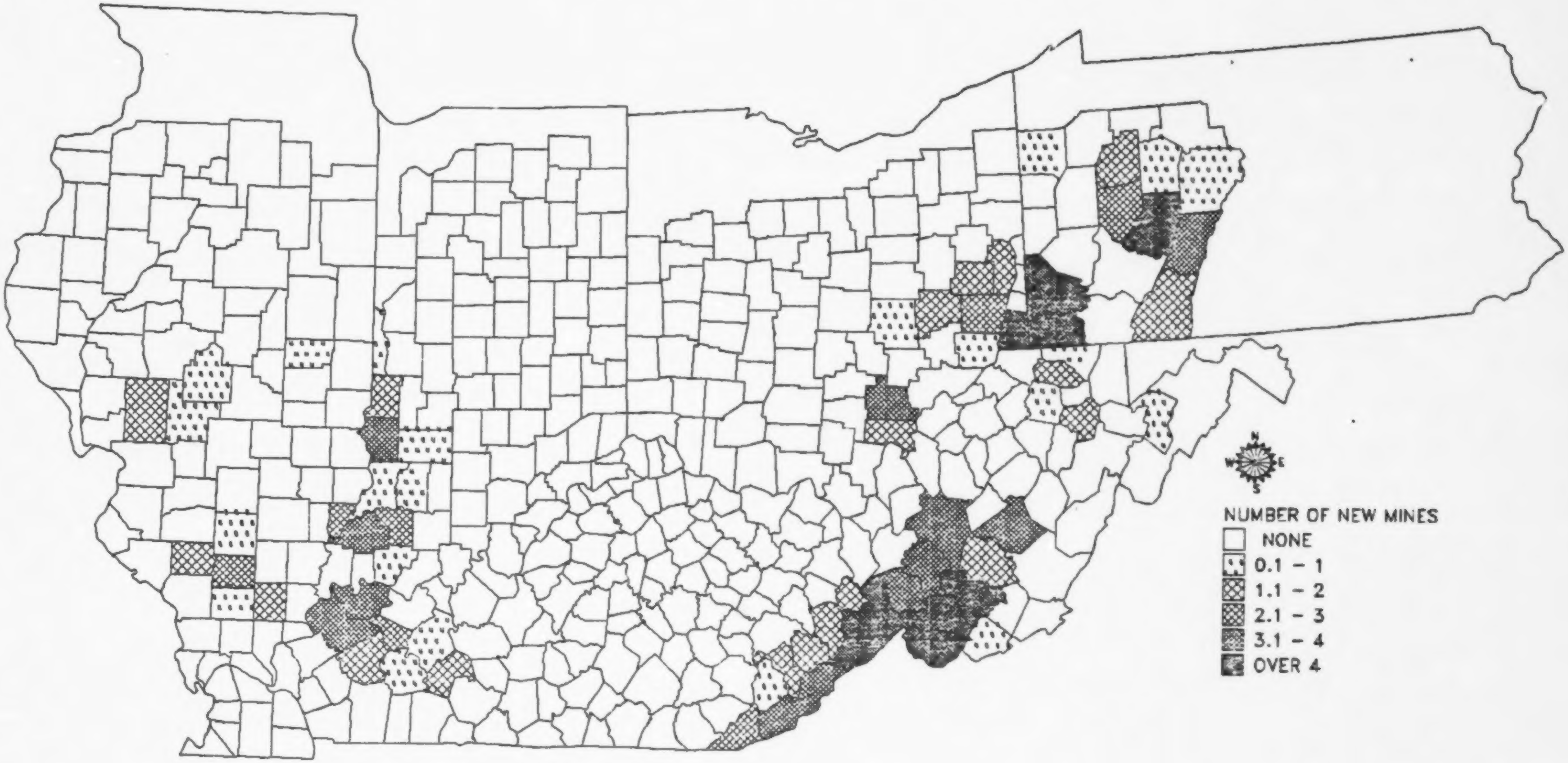
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY

BY CAGIS/UICC, MARCH, 1980

FIGURE 6

NEW UNDERGROUND MINES: SCENARIO 2b

1.5 MMTPY CAPACITY PER MINE

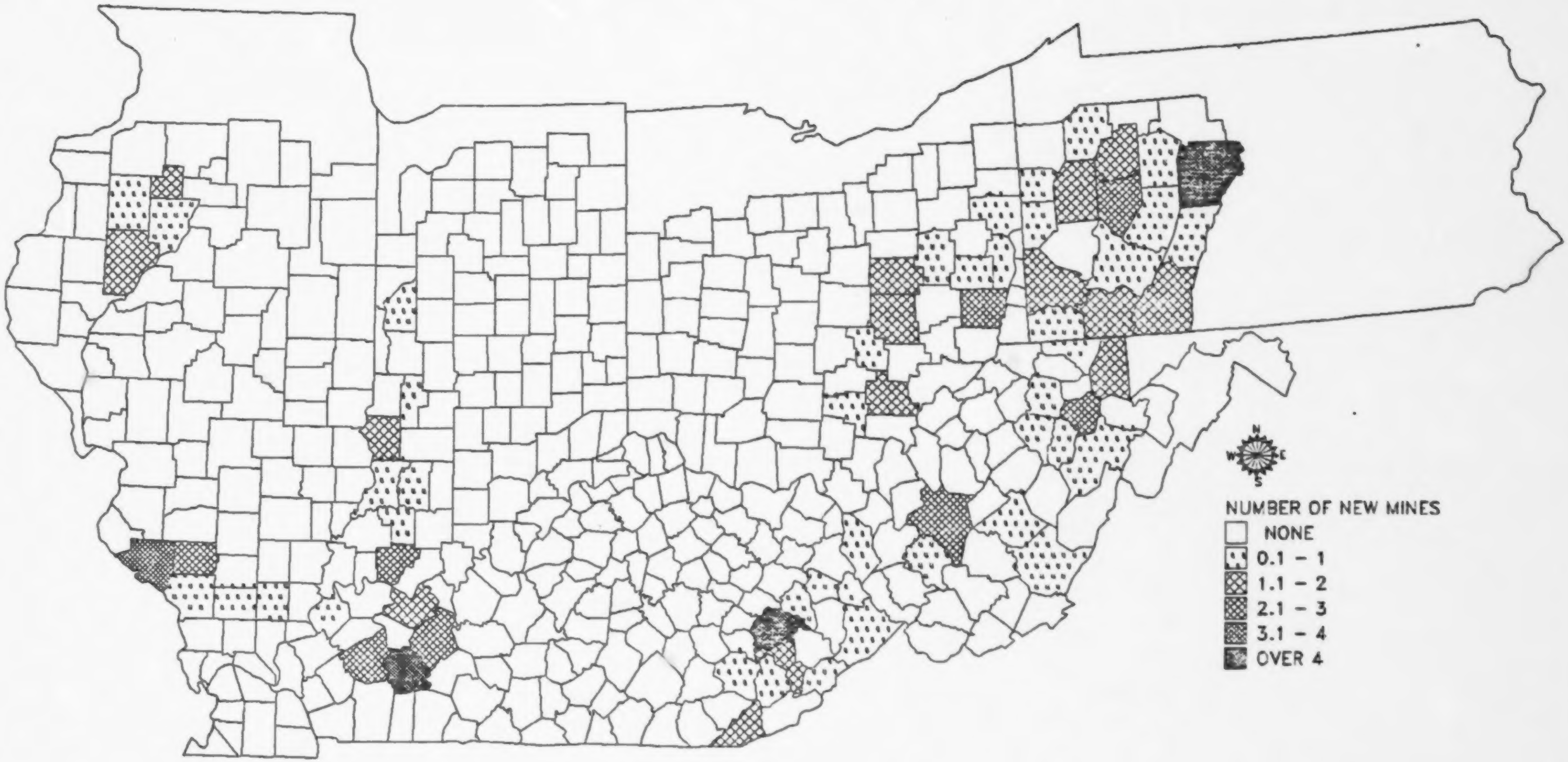

N
W
E
S
NUMBER OF NEW MINES
NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY
BY CAGIS/UICC, MARCH, 1980

FIGURE 7

NEW SURFACE MINES: SCENARIO 2b

1.5 MMTPY CAPACITY PER MINE

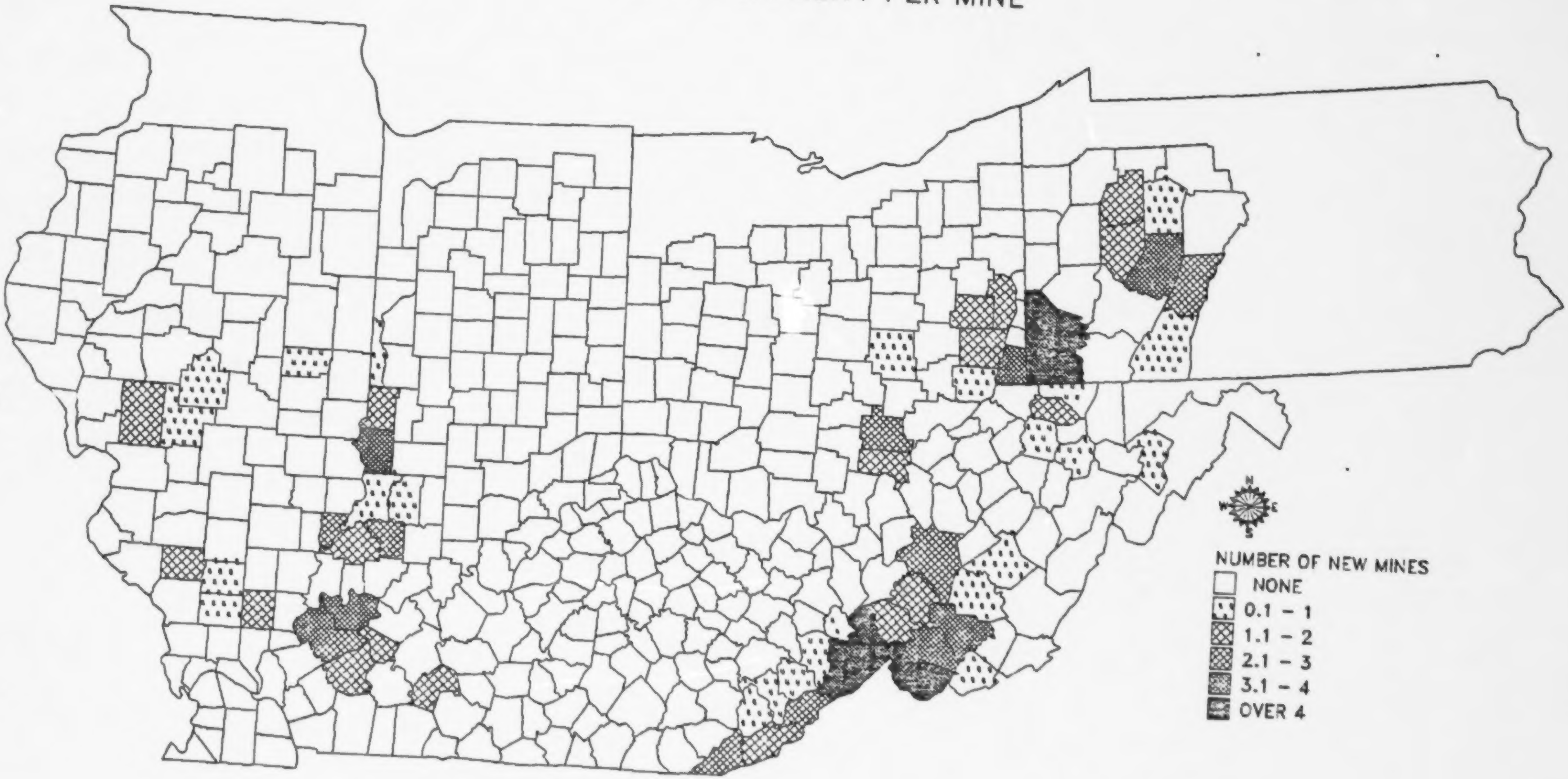

N
W
E
S
NUMBER OF NEW MINES
NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY
BY CAGIS/UICC, MARCH, 1980

FIGURE 8

NEW UNDERGROUND MINES: SCENARIO 3

1.5 MMTPY CAPACITY PER MINE

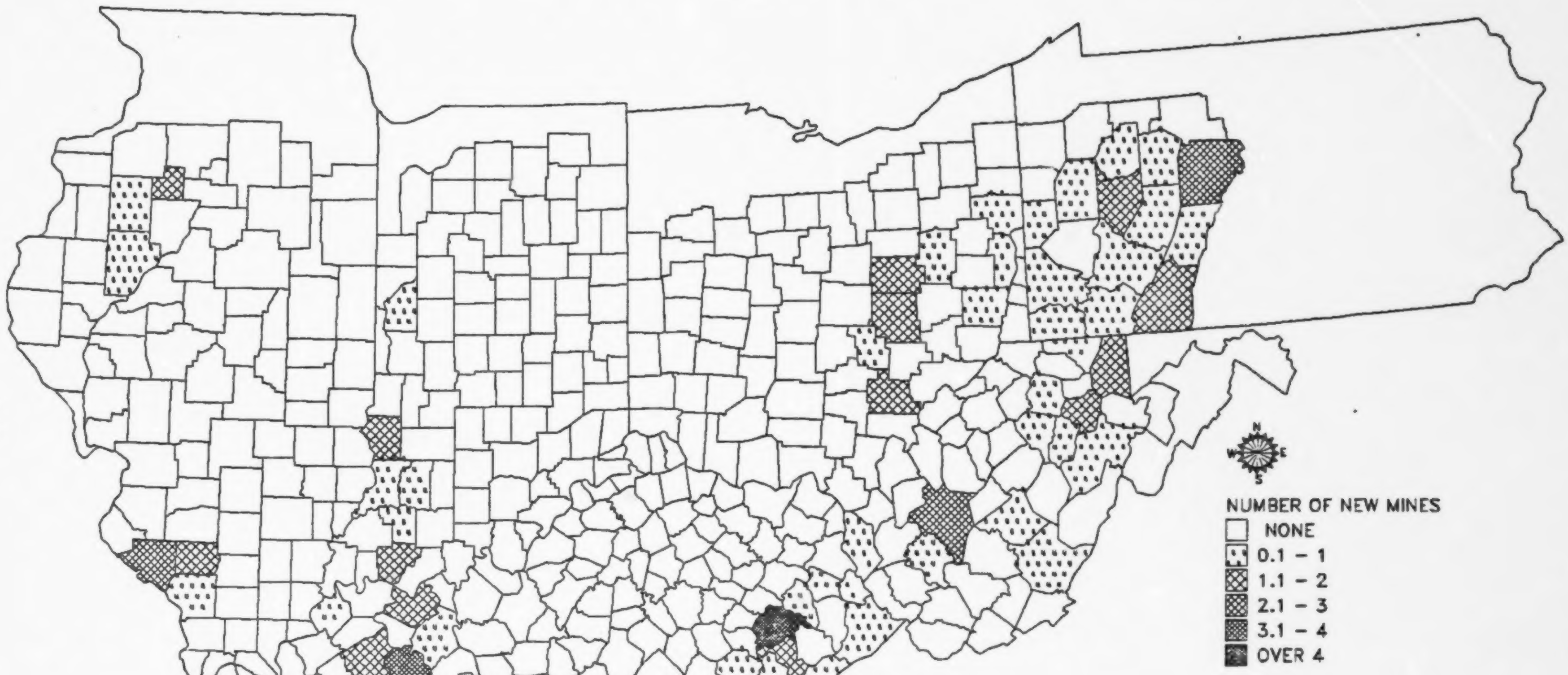

N
W
E
S
NUMBER OF NEW MINES
NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY
BY CAGIS/UICC, MARCH, 1980

FIGURE 9

NEW SURFACE MINES: SCENARIO 3

1.5 MMTPY CAPACITY PER MINE

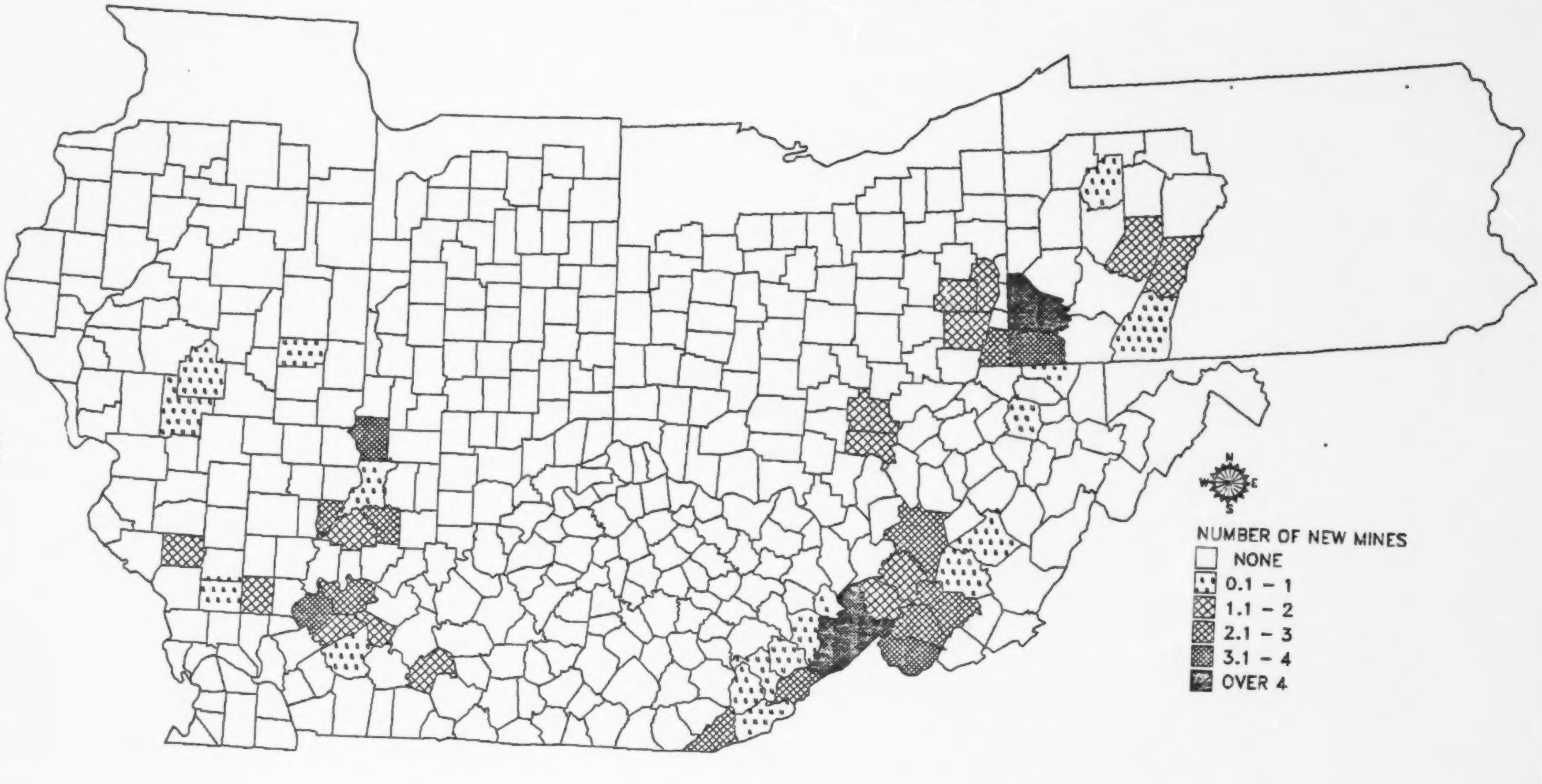

N
W
E
S
NUMBER OF NEW MINES
NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY
BY CAGIS/UICC, MARCH, 1980

FIGURE 10

NEW UNDERGROUND MINES: SCENARIO 4

1.5 MMTPY CAPACITY PER MINE


N
S
E
W
NUMBER OF NEW MINES
☐ NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME

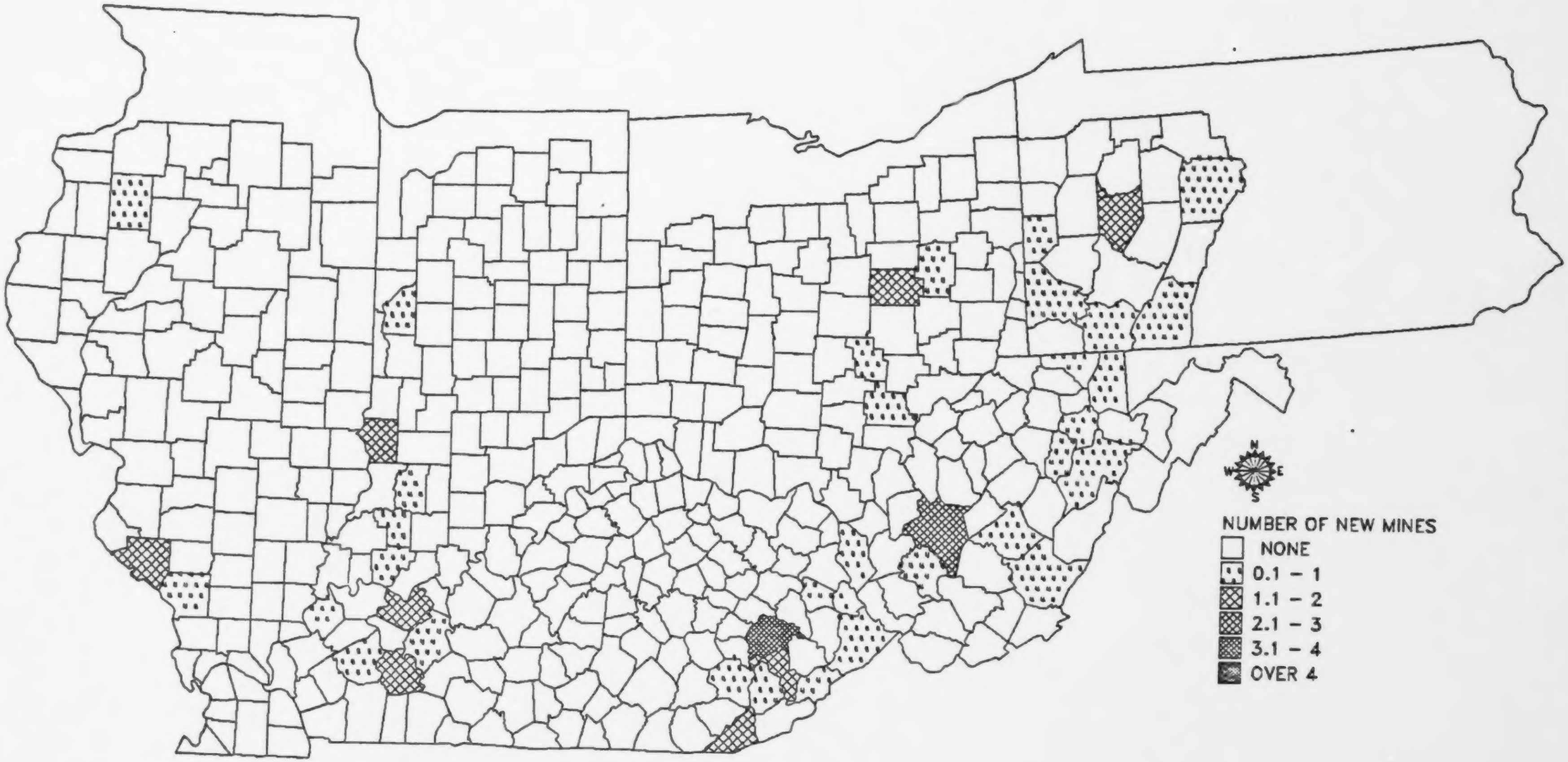
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY

BY CAGIS/UICC, MARCH, 1980

FIGURE 11

NEW SURFACE MINES: SCENARIO 4

1.5 MMTPY CAPACITY PER MINE

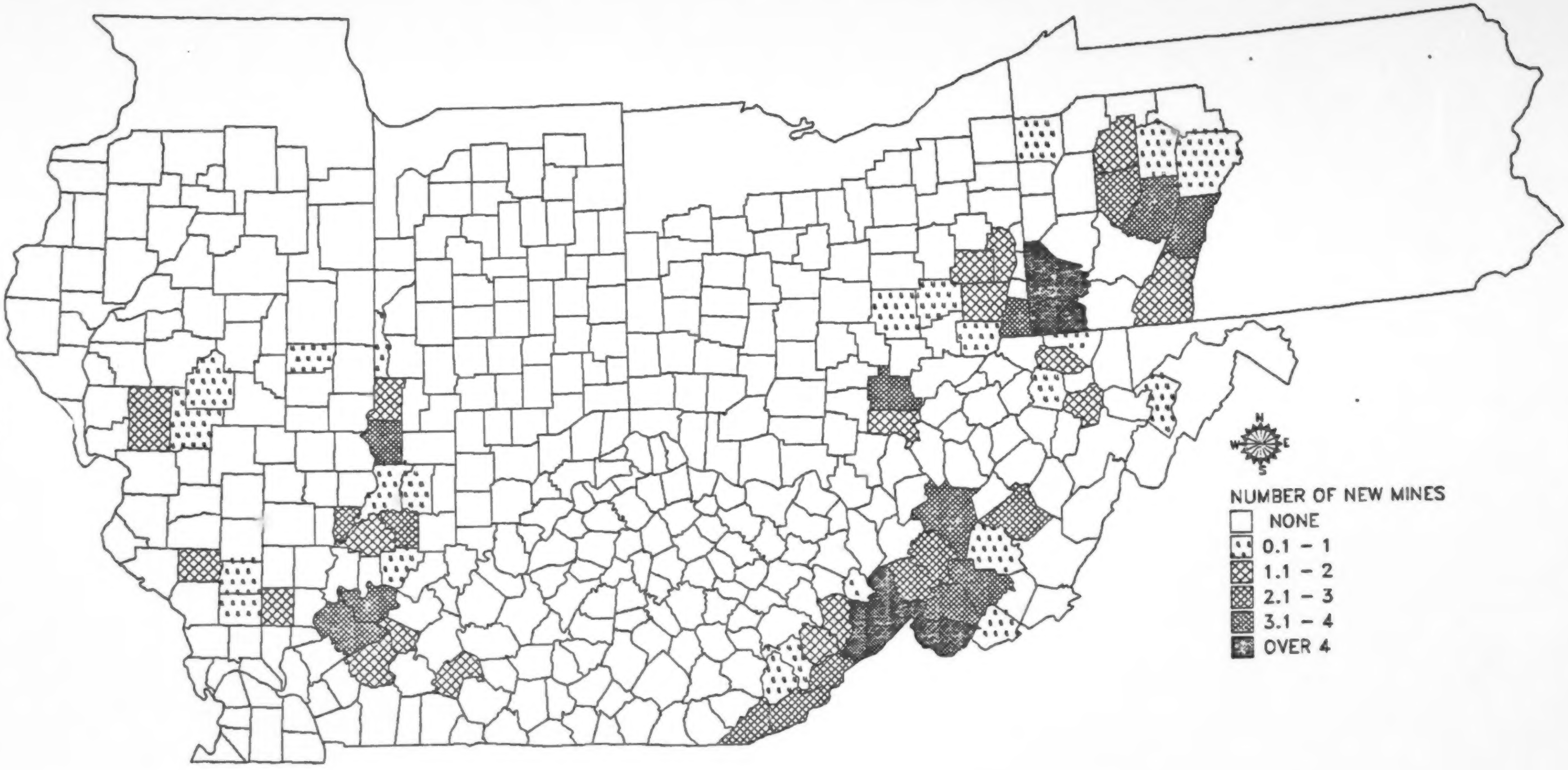

N
W
E
S
NUMBER OF NEW MINES
NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY
BY CAGIS/UICC, MARCH, 1980

FIGURE 12

NEW UNDERGROUND MINES: SCENARIO 5

1.5 MMTPY CAPACITY PER MINE


N
W
E
S
NUMBER OF NEW MINES
NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME

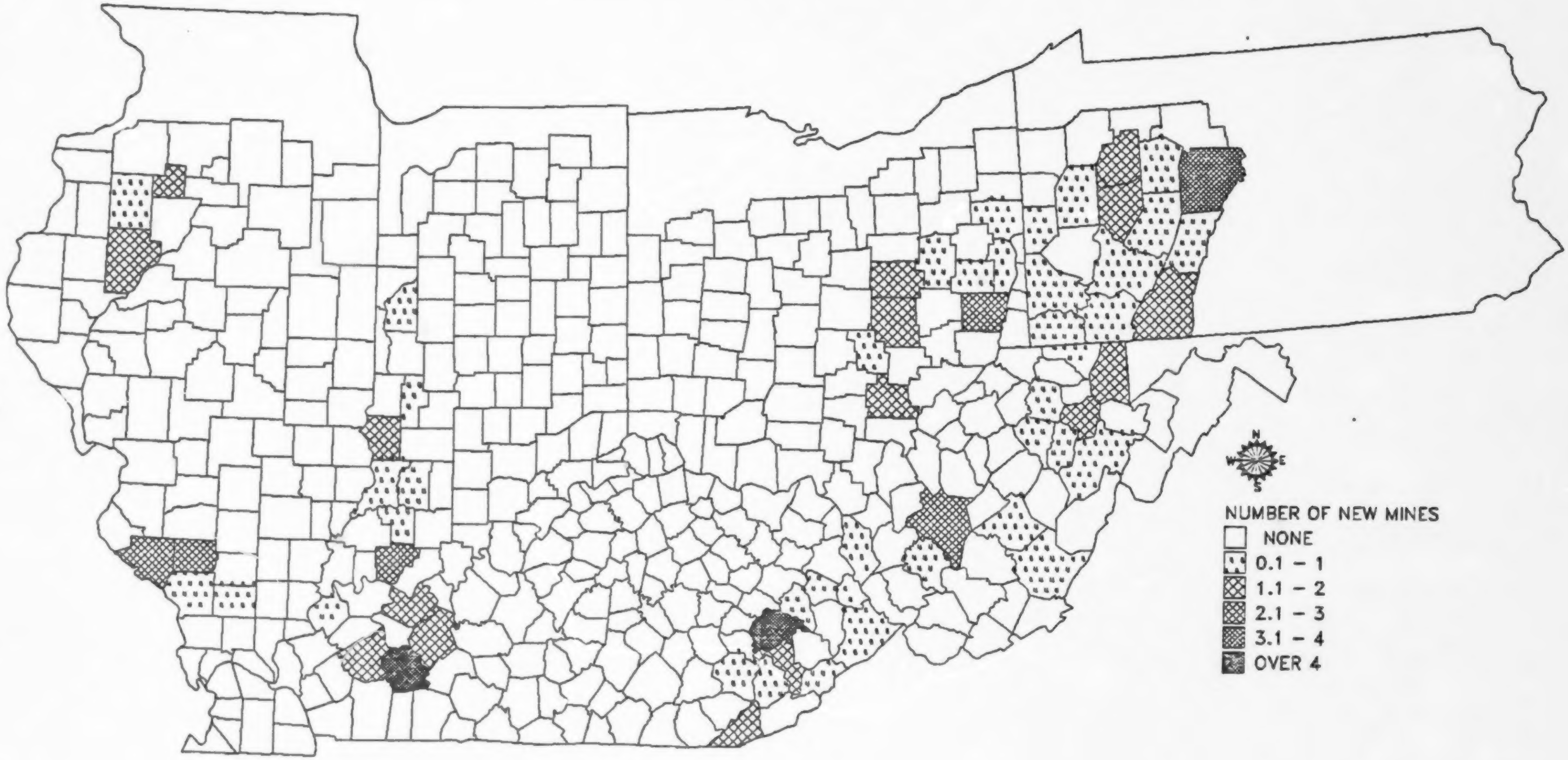
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY

BY CAGIS/UICC, MARCH, 1980

FIGURE 13

NEW SURFACE MINES: SCENARIO 5

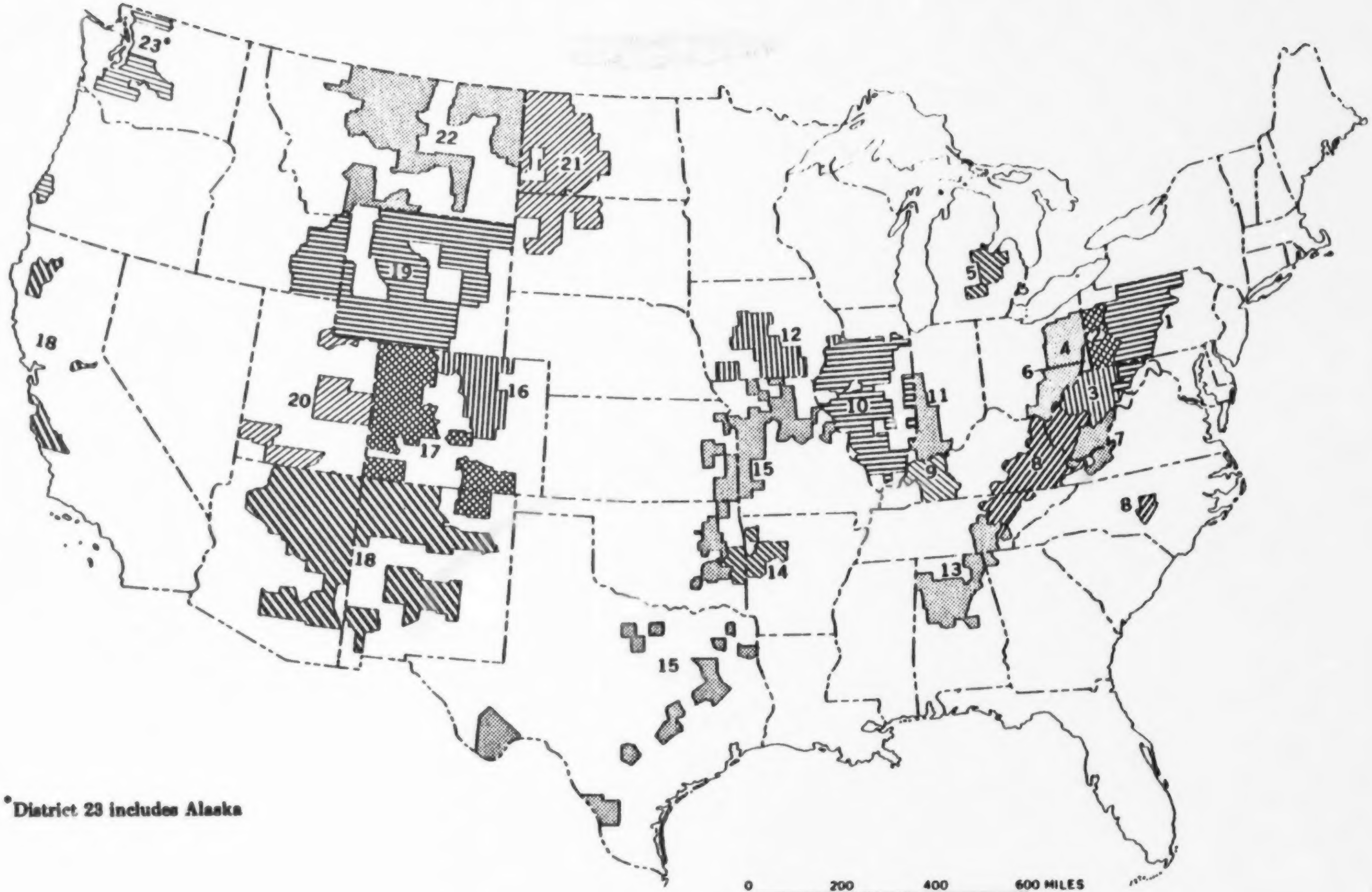
1.5 MMTPY CAPACITY PER MINE


N
W
E
S
NUMBER OF NEW MINES
NONE
0.1 – 1
1.1 – 2
2.1 – 3
3.1 – 4
OVER 4

SOURCE: COMPUTED BY D.A. BLOME
PREPARED FOR OHIO RIVER BASIN ENERGY STUDY
BY CAGIS/UICC, MARCH, 1980

FIGURE 14

FIGURE 15. BUREAU OF MINES DISTRICTS


23*
22
21
19
18
20
17
16
12
10
11
15
14
9
5
4
6
3
1
2
7
8
13
0
200
400
600 MILES

*District 23 includes Alaska

U. S. Bureau of Mines Production Districts in ORBES
(As Set Forth in the Bituminous Coal Act of 1937)

District 1.

Eastern Pennsylvania. The following counties in Pennsylvania: Bedford, Blair, Bradford, Cambria, Cameron, Centre, Clarion, Clearfield, Clinton, Elk, Forest, Fulton, Huntington, Jefferson, Lycoming, McKean, Mifflin, Potter, Somerset, Tioga. Armstrong County, including mines served by the P. & S.R.R. on the west bank of the Allegheny River, and north of the Conemaugh division of the Pennsylvania Railroad.

Fayette County, all mines on and east of the line of Indian Creek Valley branch of the Baltimore and Ohio Railroad, Indiana County north of but excluding the Saltsburg branch of the Pennsylvania Railroad between Edri and Blairsville, both exclusive.

Westmoreland County, including all mines served by the Pennsylvania Railroad, Torrance, and east.

All coal-producing counties in the state of Maryland. The following counties in West Virginia; Grant, Mineral, and Tucker.

District 2.

Western Pennsylvania. The following counties in Pennsylvania: Allegheny, Beaver, Butler, Greene, Lawrence, Mercer, Venango, Washington. Armstrong County, west of the Allegheny River and exclusive of mines served by the P. & S.R.R. Indiana County, including all mines served on the Saltsburg branch of the Pennsylvania Railroad north of Conemaugh River.

Fayette County, except all mines on and east of the line of Indian Creek Valley branch of the Baltimore and Ohio Railroad. Westmoreland County, including all mines except those served by the Pennsylvania Railroad from Torrance, east.

District 3.

Northern West Virginia. The following counties in West Virginia: Barbour, Braxton, Calhoun, Doddridge, Gilmer, Harrison, Jackson, Lewis, Marion, Monongalia, Pleasants, Preston, Randolph, Ritchie, Roane, Taylor, Tyler, Upshur, Webster, Wetzel, Wirt, Wood. That part of Nicholas County including mines served by the Baltimore and Ohio Railroad and North.

District 4.

Ohio. All coal-producing counties in Ohio.

District 5.

Michigan. All coal-producing counties in Michigan. (Not in ORBES)

District 6.

Panhandle. The following counties in West Virginia: Brooke, Hancock, Marshall and Ohio.

District 7.

Southern Numbered 1. The following counties in West Virginia: Greenbrier, Mercer, Monroe, Pocahontas, Summers. Fayette County, east of Gauley River and including the Gauley River branch of the Chesapeake and Ohio Railway and mines served by the Norfolk and Western Railway. McDowell County, that portion served by the Dry Fork branch of the Norfolk and Western Railway and east thereof.

Raleigh County, excluding all mines on the Coal River branch of the Chesapeake and Ohio Railway. Wyoming County, that portion served by the Gilbert branch of the Norfolk and Western Railway lying east of the mouth of Skin Fork of Guyandot River and that portion served by the main line to the Glen Rogers branch of the Norfolk and Western Railway.

The following counties in Virginia: Montgomery, Pulaski, Wuthe, Giles, Craig. Tazewell County, that portion served by the Dry Fork branch to Cedar Bluff and from Bluestone Junction to Boissevain branch of the Norfolk and Western Railway and Richlands-Jewell Ridge branch of the Norfolk and Western Railway.

Buchanan County, that portion served by the Richlands-Jewell Ridge branch of the Norfolk and Western Railway and that portion of said county on the headwaters of Dismal Creek, east of Lynn Camp Creek (a tributary of Dismal Creek).

District 8.

Southern Numbered 2. The following counties in West Virginia: Boone, Clay, Kanawha, Lincoln, Logan, Mason, Mingo, Putnam, Wayne, Cabell. Fayette County, west of, but not including mines of the Gauley River branch of the Chesapeake and Ohio Railway. McDowell County, that portion not served by and lying west of the Dry Fork branch of the Norfolk and Western Railway.

Raleigh County, all mines on the Coal River branch of the Chesapeake and Ohio Railway and north thereof. Nicholas County, that part south of and not served by the Baltimore and Ohio Railroad. Wyoming County, that portion served by the Gilbert Branch of the Norfolk and Western Railway lying west of the mouth of the Skin Fork of Guyandot River.

The following counties in Virginia: Dickinson, Lee, Russell, Scott, Wise. All of Buchanan County, except that portion on the headwaters of Dismal Creek, east of Lynn Camp Creek (tributary of Dismal Creek) and that portion served by the Richlands-Jewell Ridge branch of the Norfolk and Western Railway.

Tazewell County, except portions served by the Dry Fork branch of the Norfolk and Western Railway and branch from Bluestone Junction to Boissevain of the Norfolk and Western Railway and Richlands-Jewell Ridge branch of the Norfolk and Western Railway.

The following counties in Kentucky: Bell, Boyd, Breathitt, Carter, Clay, Elliott, Floyd, Greenup, Harlan, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, McCreary, Magoffin, Martin, Morgan, Owsley, Perry, Pike, Rockcastle, Wayne, Whitley.

The following counties in Tennessee: Anderson, Campbell, Claiborne, Cumberland, Fentress, Morgan, Overton, Roane, Scott.

The following counties in North Carolina: Lee, Chatham, Moore.

District 9.

West Kentucky. The following counties in Kentucky: Butler, Christian, Crittenden, Daviess, Hancock, Henderson, Hopkins, Logan, McLean, Muhlenberg, Ohio, Simpson, Todd, Union, Warren, Webster.

District 10.

Illinois. All coal-producing counties in Illinois.

District 11.

Indiana. All coal-producing counties in Indiana.